

Jan. 2, 1923.

T. W. HOLLEY,
PEDESTAL FOR SAND REEL SHAFTS.
FILED FEB. 10, 1921.

1,440,600.

2 SHEETS—SHEET 1.

Fig. 1.

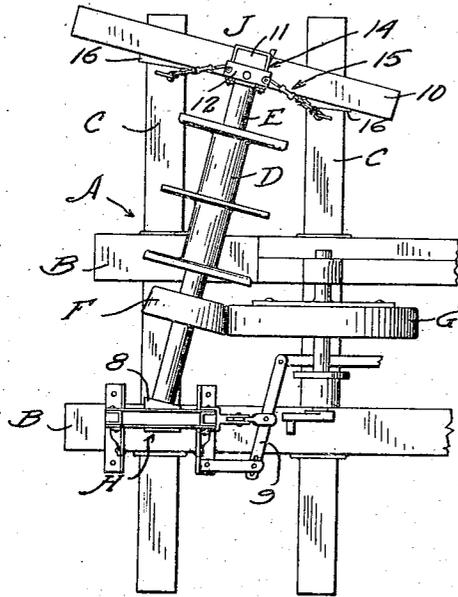


Fig. 4.

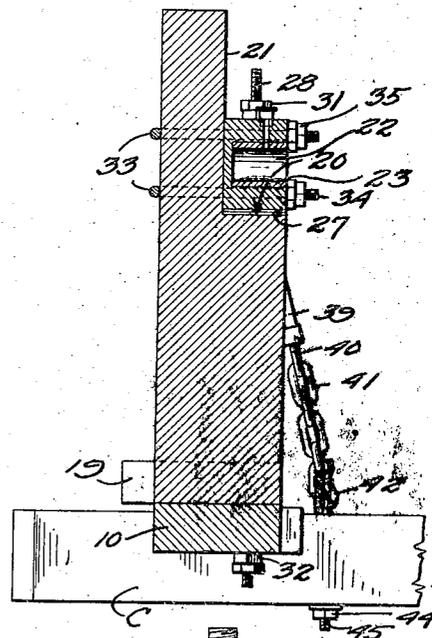


Fig. 5.

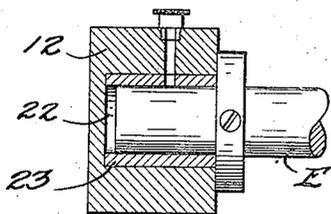
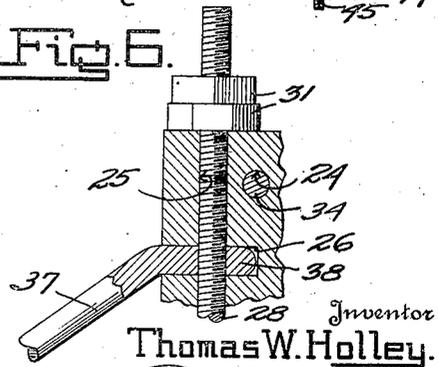


Fig. 6.



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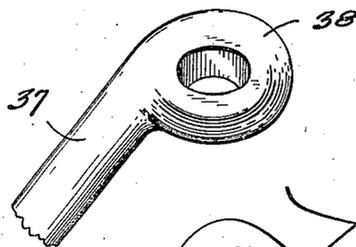
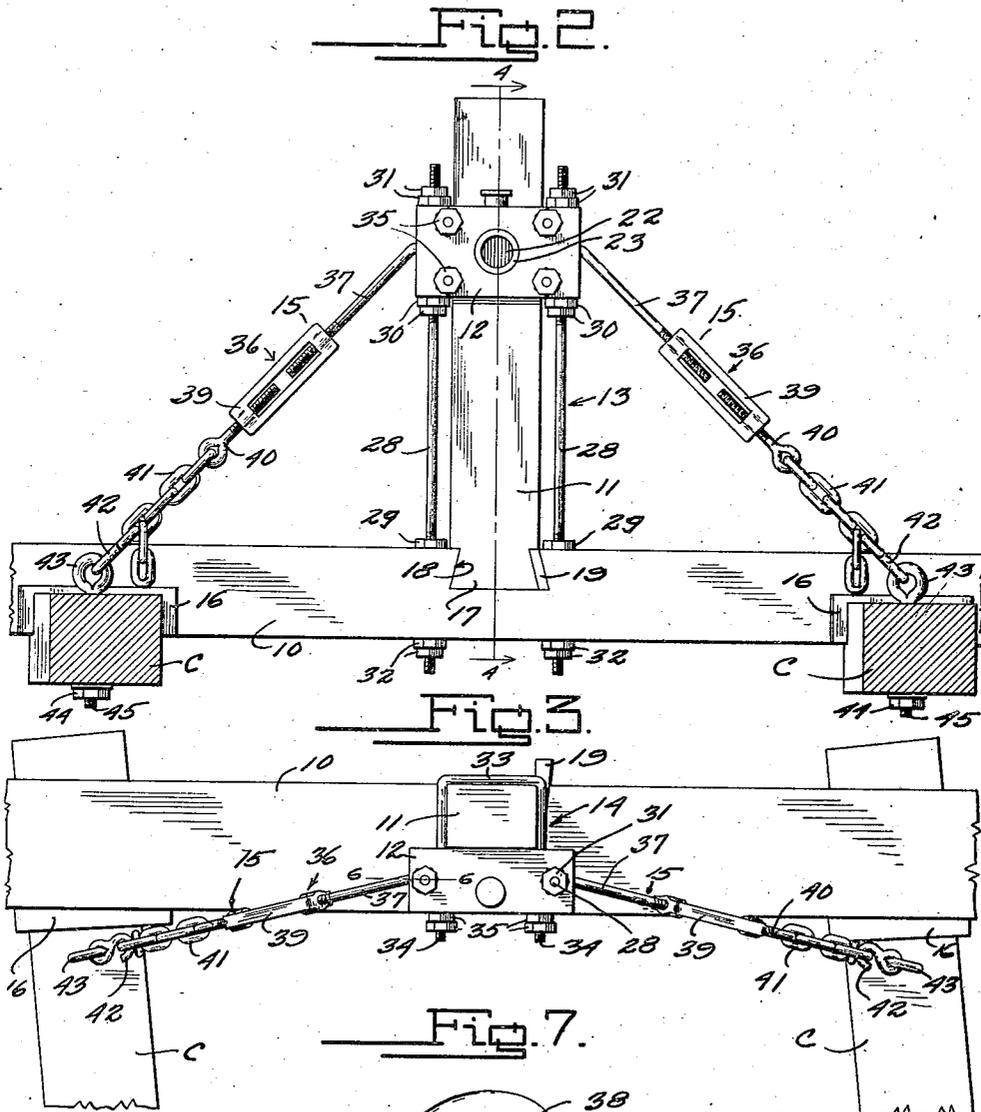
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

THOMAS W. HOLLEY, OF RANGER, TEXAS.

PEDESTAL FOR SAND-REEL SHAFTS.

Application filed February 10, 1921. Serial No. 444,029.

To all whom it may concern:

Be it known that I, THOMAS W. HOLLEY, a citizen of the United States, residing at Ranger, in the county of Eastland and State of Texas, have invented certain new and useful Improvements in Pedestals for Sand-Reel Shafts, of which the following is a specification.

The present invention relates to bearings and more particularly to pedestal bearings for the tail end of sand reel shafts.

It is now common practice to support the shaft of sand reels at one end by a wooden tail post framed to a sand reel tail sill which is in turn supported on mud sills of the well drilling rigs. The tail post is usually of oak and has a hole bored transversely into its side constituting a bearing for the sand reel shaft. As a result the wood wears away the hole becoming enlarged so that there is considerable objectional play and which ultimately necessitates the replacement of the post or the provision of a bushing or some filler about the shaft. The wood is apt to split since the bringing of the sand reel into use subjects the post to considerable stresses and strains incident to raising of the bailer and forcing of the sand reel pulley into such frictional engagement with band wheel as to function properly. Furthermore, with this type of tail post, it is not always possible to erect the rig and dispose the post so that it is in proper relation to the band wheel that there will be good intimate contact between the band wheel and pulley and much time and labor may be consumed in adjusting parts so that the sand reel pulley will not unduly wear the band wheel.

One of the principal objects of my invention is to provide a pedestal for sand reel shafts which may include the usual tail sill, mud sills and a modified tail post, adapted to carry a bearing which may be readily adjusted vertically and longitudinally of the rig and held firm in the adjusted position against accidental displacement incident to use of the rig. In this connection it has been found that vibration and forces coming upon the rig is apt to cause displacement of the ordinary sand reel tail sill and tail post and consequently adjustments must be made if

the efficiency of the apparatus is to be maintained at a maximum.

Another object of the invention is to provide a pedestal for said reel shafts in which a metallic bearing block is provided adapted to receive an alloy lining such as Babbitt metal, since this bearing must serve as a pivot for the tail end of the sand reel shaft. This lining may be readily replaced or remelted and used again, when necessary to provide a substantial bearing.

Other objects and advantages of the invention will appear in the following detailed description taken in connection with the accompanying drawings, forming a part of this specification, in which drawings:

Figure 1 is a plan view of a sand reel, supports therefor, and a portion of well drilling rigs, showing my improved pedestal for the sand reel shaft.

Fig. 2 is a detail view in elevation showing the pedestal.

Fig. 3 is a plan view of the same.

Fig. 4 is a vertical sectional view on the line 4-4 of Figure 2.

Fig. 5 is an enlarged detail view, in vertical section, and elevation, showing the sand reel shaft in operative relation to the bearing block.

Fig. 6 is a fragmentary detail sectional view on the line 6-6 of Figure 3.

Fig. 7 is a detail view in perspective of a portion of tensioning means for bracing the bearing block.

In the drawings, where similar characters refer to similar parts throughout the views, A designates the sand reel end portion of well drilling rig, including main sills B, mud sills C, sand reel D having a shaft E and pulley F, band wheel G and pedestals H and J for shaft E.

The invention is herein shown as applied to what is commonly known as the standard rig, in which the sand reel shaft E is disposed with its axis extending diagonally cross wise the longitudinal axis of the base of the rig, but it is to be understood that the principle of this invention may be applied to other types of rig, without departing from the spirit of the invention. It is understood that, in practice, the sand reel D is used for the purpose of lowering and raising a sand

pump or bailer, not shown in the drawings, and this is accomplished by moving the shaft E, as by shifting the bearing 8 of pedestal H so that the pulley F is moved into and out of engagement with the band wheel G.

The particular type of pedestal H shown in Figure 1 of the drawing does not form a part of the present invention, but is more specifically disclosed in my co-pending application for patent filed on the tenth day of February, 1921, Serial Number 444,030. It is shown merely by way of example to indicate that the bearing 8 may be shifted longitudinally of one of the main sills B, as by mechanism 9 so that the pedestal J embodies the pivotal bearing for shaft E, as hereinafter noted. The present invention is designated by character J.

The pedestal J, in addition to the mud sills C, in the example shown, comprises a tail sill 10, tail post 11, bearing block 12, means 13 for adjusting the bearing block longitudinally of post 11, means 14 for securing the bearing block 12 to the post 11 in adjusted position, and means 15 bracing the block 12 from the mud sills C.

As is the usual practice, the mud sills C are shown in spaced apart relation, and the tail sill 10 may be of ordinary formation, supported by these mud sills in adjusted relation, as by wedges 16.

The tail post 11 may be carried by tail sill 10 in the usual manner, that is, by having its lower portion dove tailed as at 17, received in a recess 18 in the sill, a wedge 19 being provided to hold it in fixed relation to the sill. It is preferred to provide this post with a seat 20 and an upright abutment 21 laterally of said seat and this may well be accomplished by reducing the upper end portion of the tail post, as clearly shown in Figure 4 of the drawings.

Referring now to the bearing block 12, it is preferably made of metal, and is provided with a shaft receiving opening 22, preferably lined with Babbitt metal 23, this opening receiving the end portion of the sand reel shaft E. In the preferred embodiment of the invention, and for a purpose to be subsequently set forth, this bearing block is also provided with transverse ways 24, vertical ways 25 and recesses 26 open at each end of the block and intersecting the axes of ways 25. The ways 24 are arranged in pairs, one pair being above the opening 22 and the other pair therebelow. The vertical ways 25 are provided adjacent the ends of the block, one at each side of the opening 22. The block 12 is adapted to be supported by the seat 20 of the post, as by resting directly thereupon, or when adjustment is desired vertically, there may be interposed between the block and the seat, filler pieces 27. The block is also adapted to engage the abutment 21 and when in use is held firmly against this abutment and in supported relation to the seat 20.

As suitable means for adjusting the block longitudinally of the post 11, the means 13 is provided and comprises vertical rods 28, one at each side of the post 11 and nuts 29, 30, 31 and 32 in screw threaded engagement with these rods for the purpose of holding them in fixed adjusted relation with respect to the sill 10 and bearing block 12. The lower portions of these rods 28 extend through the sill 10, the nuts 29 engaging the upper face of the sill, and the upper portions of these rods extend through the ways 25 in block 12, the nuts 30 engaging the under side of the block. Nuts 31 are provided to hold the block 12 in the desired position with respect to block 12, while nuts 32 engage the under side of the sill 10. It is thus to be noted that, by releasing either nuts 31 or 32 and rotating either nuts 29 or 30, the block 12 may be raised with respect to seat 20 and after in the desired adjusted position, the nuts which have been released may be tightened, thus holding the block firm in adjusted position toward or from sill 10, and in a manner to be securely supported by the seat 20.

After the block has been adjusted in a vertical direction, it may be secured to the bearing block 12, as by means 14, which, in the example shown, comprises a pair of U-shaped members 33 which embrace the post 11, the stems 34 of these members 33 extending through the transverse ways 24 in the bearing block, and provided with nuts 35 in screw threaded engagement with the end portions of stems 34.

The bearings for the shaft of sand reels are subjected to stresses and strains incident to lowering and raising the sand pump or bailer and the greatest pull upon the shaft is usually upwardly and diagonally, in the line of direction of the cable leading off from the sand reel. There is also pressure brought upon the bearing incident to bringing of the pulley F into intimate contact with the band wheel G for the transmission of motion. There is also a slight torsional stress at the bearing which acts as a pivot for the shaft, in moving the pulley F into engagement with band wheel G, but this is taken up, to a large extent by the Babbitt metal in the bearing block. However, it is very desirable to provide means for bracing the block 12 from the mud sills C so that it may remain rigid even when subjected to these forces, and also to prevent longitudinal movement of the tail sill with respect to the mud sills. Suitable means for this purpose is designated generally by the character 15 and in the example shown is in the form of two tensioning devices 36, one for each end

of the bearing block 12. Each tensioning device comprises a rod 37, having an eye 38 adapted to fit in the recess 26 in bearing block 12 and to receive the vertical rod 28, as clearly shown in Figure 6 of the drawings; a turnbuckle 39 in screw threaded engagement with rod 37 at its end portion opposite to eye 38, and also receiving an eye bolt 40; and a flexible member 41 connected with eye bolt 40 and adjustably connected to the mud sill C. The flexible member 41 may be in the form of a chain, the links of which are adapted to be engaged by a hook 42 secured to the mud sill as, by way of example, by eye bolt 43 and nut 44, the shank 45 of the eye bolt extending through the mud sill. The rod 37 is thus detachably connected with the bearing block 12, as by engagement of its eye 38 with the vertical rods 28; the turnbuckle 36 provides for minute adjustment of the tensioning device; and the chain 41 and the hook 42, provides for major adjustments. When erecting the rig, if it is necessary to move the tail sill 10 transversely of the mud sills C as by releasing the wedges 16, in order that the pulley F may be disposed in proper relation to the band wheel G, for successful operation, the hooks 42 may be disengaged from the links of chains 41 and after proper adjustment is had, the hooks may be disposed in operative relation to the links of the chains which are most suited for their reception, and the turnbuckles 36 may then be rotated to draw the eye bolts 40 and rods 37 of each tensioning device toward each other.

Changes in details may be made without departing from the spirit or scope of my invention; but,

I claim:

1. A pedestal for sand reel shaft comprising in combination, a pair of mud sills in spaced apart relation, a tail sill mounted upon said mud sills, a tail post carried by said tail sill intermediate said mud sills, a bearing block, means for adjusting said block longitudinally of said post, means for clamping said block in adjusted position laterally of said post, and means engaging said mud sills for bracing said block.

2. In a pedestal for sand reel shaft, the combination of a tail post provided with a seat and an upright abutment at its upper end portion, a bearing block adapted to be supported by said seat and engage laterally said abutment, and means for clamping said block to said abutment in adjusted position vertically thereof.

3. In a pedestal for sand reel shaft, the combination of a tail post provided with a seat and an upright abutment at its upper end portion, a bearing block adapted to be supported by said seat and engage laterally said abutment, means for adjusting said

bearing block vertically of said abutment, and means for clamping said block to said abutment in its adjusted position.

4. In a pedestal for sand reel shafts, the combination of a tail post having its upper end portion reduced to provide a seat and an upright leading from said seat, a bearing block adapted to be supported by said seat and to abut against said upright, and clamp means embracing said upright and adapted to retain said block in adjusted relation to said post.

5. In a pedestal for sand reel shafts, the combination of a sill, a tail post mounted upon said sill and provided with a seat and an upright abutment at its upper end portion, a bearing block adapted to engage said abutment above said seat, means engaging said sill for moving said bearing block toward and from said seat, and means for securing said block to said abutment in its adjusted position.

6. In a pedestal for sand reel shafts, the combination of a sill, a tail post mounted upon said sill and provided with a seat and an upright abutment at its upper end portion, a bearing block adapted to engage said abutment above said seat, a pair of upright rods carried by said sill and bearing block, devices on said rods for adjusting them transversely of the sill and bearing block for adjustment of the latter relative to the said seat of said post, and means for securing said block to said abutment in its adjusted position.

7. A pedestal for sand reel shafts, comprising in combination, a pair of mud sills in spaced apart relation, a tail sill mounted upon said mud sills, a tail post carried by said tail sill intermediate said mud sills, a bearing block, means for adjusting said block longitudinally of said post, means for clamping said block in adjusted position laterally of said post, and adjustable tensioning devices connecting opposite ends of said bearing block and said mud sills.

8. A pedestal for sand reel shafts comprising in combination, a pair of mud sills in spaced apart relation, a tail sill mounted upon said mud sills, a tail post carried by said tail sill intermediate said mud sills, means for securing said bearing block laterally of said post in adjusted position, and adjustable tensioning devices connecting opposite ends of said bearing block and said mud sills.

9. A pedestal for sand reel shafts comprising in combination, a pair of mud sills in spaced apart relation, a tail sill mounted upon said mud sills, a tail post carried by said tail sill intermediate said mud sills, a bearing block extending longitudinally of said tail sill and in engagement with said post at the upper end portion of the latter,

said block provided with a shaft receiving opening, vertical ways at each side of said shaft receiving opening, and recesses open at each end of the block and intersecting the axes of said ways, an adjustable tensioning device for each end of said block connected to the adjacent mud sill and including a rod having an eye fitting into the adjacent recess of said block with its opening aligned with the way therein, upright rods connected with said tail sill and extending through said ways of said block and said eyes of said tensioning devices, and nuts in screw threaded engagement with said rods at the upper and lower portions of said block and adapted to adjust the latter longitudinally of said post.

THOMAS W. HOLLEY.