

(No Model.)

W. FORGIE.
GUDGEON.

No. 489,733.

Patented Jan. 10, 1893.

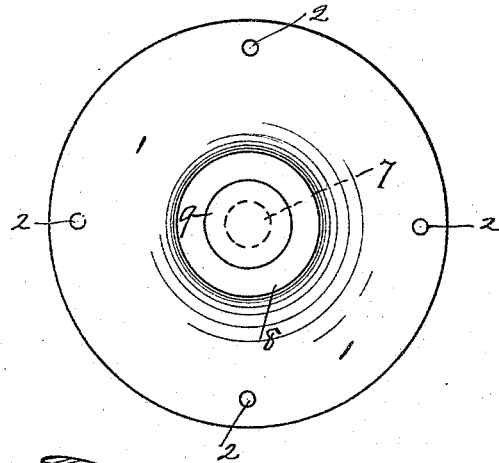


Fig. 1.

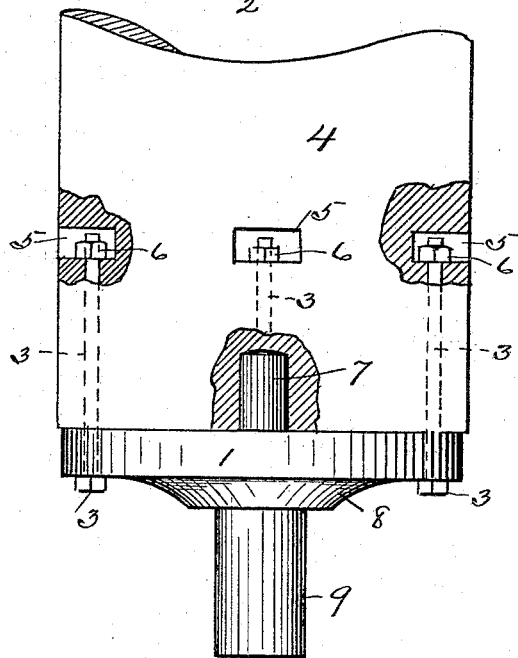


Fig. 2.

Witnesses:

M. E. Harrison.
J. A. Herrou

Witnesses:

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Rev. *Asst. Sec.*

UNITED STATES PATENT OFFICE.

WILLIAM FORGIE, OF WASHINGTON, PENNSYLVANIA.

GUDGEON.

SPECIFICATION forming part of Letters Patent No. 489,733, dated January 10, 1893.

Application filed October 8, 1891. Serial No. 408,281. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM FORGIE, a citizen of the United States, residing at Washington, in the county of Washington and State of Pennsylvania, have invented certain new and useful Improvements in Gudgeons; and I do hereby 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My present improvement relates to a novel form of gudgeon or journal designed for use more particularly on wood shafts or reels, such for example as bull-wheel shafts, and sand-reel shafts used on oil and gas well drilling rigs.

One of the objections to the common form of wood shafts used on oil well rigs is that the journal or gudgeon becomes loose and plays in the end of the shaft which is due to the fact that the wood shrinks when it has been used for a short time and is exposed to the weather. To overcome this, it is customary to reinforce the wood shaft by metallic bands and end pieces, but even with this construction the shaft shrinks and the heating of the journal dries the wood, so that the journal or gudgeon is loosened.

The object of my present invention is to dispense with the reinforce metallic bands and end pieces and provide novel fastening means which hold the gudgeon or journal in place on the end of the shaft in such manner that the shrinkage of the wood will not affect the rigidity of the journal or gudgeon; and a further object is to simplify and cheapen the construction and make the device applicable to any kind of a wood shaft.

With these ends in view, the improvement consists of a flat faced plate having an axial rigid stud on the rear side which is driven firmly into the end of the shaft, said plate having on its opposite side the integral journal or gudgeon, combined with longitudinal fastening bolts which pass through the face plate and into the longitudinal openings in the wood shaft, and nuts seated in radial

pockets in the shaft in line with the longitudinal openings therein and which receive the inner end of said fastening bolts.

I have illustrated my improvements in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is an elevation showing the front of the face plate, the journal or gudgeon, and the openings adapted to permit the fastening bolts to pass through said face plate. Fig. 2 is a plan view of the wood shaft, the face plate, and the parts associated therewith, the shaft being partly in section to show the axial rigid stud of the face plate driven into the end of the shaft and the nuts on the ends of the bolts.

Like figures of reference denote like parts in both the figures of the drawings.

The wood shaft is shown at 4 in Fig. 1 of the drawings, and in the center of this shaft is bored a hole into which is securely and rigidly driven an axial stud 7 on the rear side of the face plate 1. This face plate is fitted or applied directly against the end of the wood shaft, and said plate is provided with the axial stud 7 and with the axial journal or gudgeon 9. This gudgeon 9 projects or extends from the front or outer side of the face plate and the stud 7 projects from the inner side of said face plate, the two parts being in axial alignment with each other. The face plate, the stud and the gudgeon are cast or formed of one solid piece of metal; and in order to give the face plate proper clearance when the gudgeon is fitted in its bearing I provide an integral boss 8 on the outer side of the plate, between the body of the same and the gudgeon.

Near the periphery or edge of the face plate or disk is pierced a series of transverse bolt-holes 2, and longitudinally through the shaft 4 are formed a series of corresponding bolt-passages 3 indicated by dotted lines in Fig. 2, the face plate being so adjusted that its bolt holes 2 coincide with the bolt passages in the shaft. At the inner ends of the bolt passages in the shaft are provided the radial pockets 5 which open through the surface of the shaft and have their inner ends communicating with the longitudinal bolt passages 3; and in

these radial pockets are fitted the nuts 6 into which are screwed the inner threaded ends of the bolts.

5 The manner of applying the face plate to the shaft is as follows:—After the central hole has been formed in the end of the wood shaft, the face plate is fitted or applied laterally against the end of the shaft and the central stud is forced or driven tightly into
10 said central hole, after which the bolts are inserted in the bolt holes and passages in the face plate and the shaft, and the bolts are screwed into the nuts 6 so as to hold the face plate securely on the end of the shaft.

15 A gudgeon or journal secured to the end of a wood shaft in the manner contemplated by my invention is held so securely and rigidly that it will not become loose or affected by the shrinkage of the wood shaft, nor does the
20 heating of the journal cause the wood to dry out at the center of the same as the journal is not secured directly in the end of the shaft.

I am aware of the means for fastening a gudgeon to a shaft shown in German Patent
25 No. 21,068, and disclaim the construction therein described.

What I claim as new and desire to secure by Letters Patent, is:—

The combination, with a wood shaft provided with the longitudinal bolt-passages, of 30 the flat face-plate fitted directly against the flat end of said shaft and provided, on its inner side, with the single central stud 7 which is securely driven into a hole bored in the shaft, and also provided, on its outer side, 35 with the gudgeon or journal 9 arranged in alignment with said single stud 7, and the longitudinal bolts passing through the face plate, outside of the journal and stud thereof, and through the bolt passages in the shaft, 45 the inner ends of said bolts having securing nuts, combined and arranged for service as and for the purposes herein set forth.

In testimony that I claim the foregoing I hereunto affix my signature this 29th day of 50 September, A. D. 1891.

WILLIAM FORGIE. [L. S.]

In presence of—

CHARLES GREER,
T. MCK. HUGHES.