

Feb. 13, 1923.

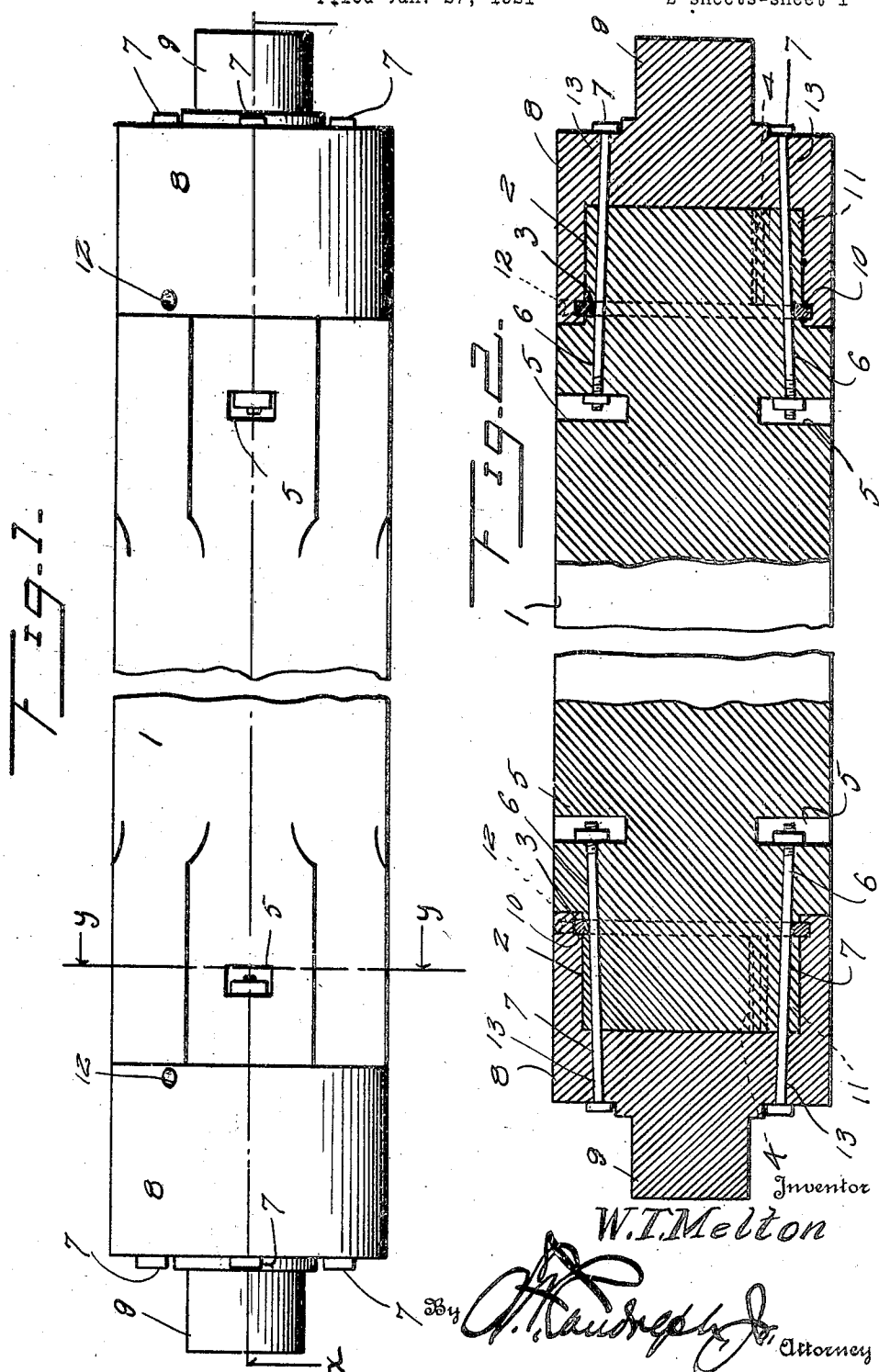
W. T. MELTON

GUDGEON

Filed Jan. 27, 1921

1,445,531

2 sheets-sheet 1



W. I. Melton

Attorney

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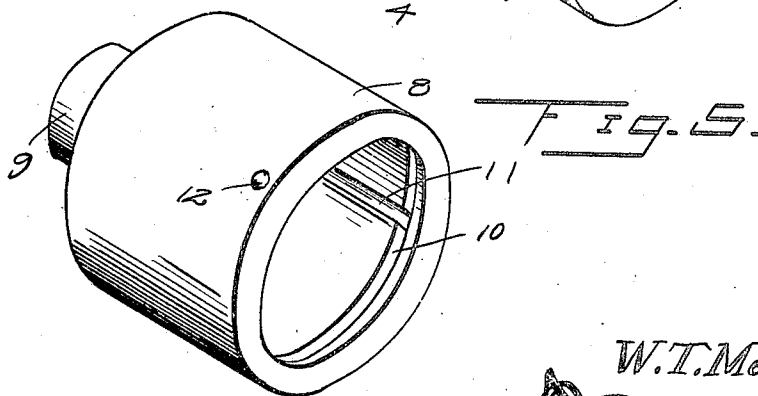
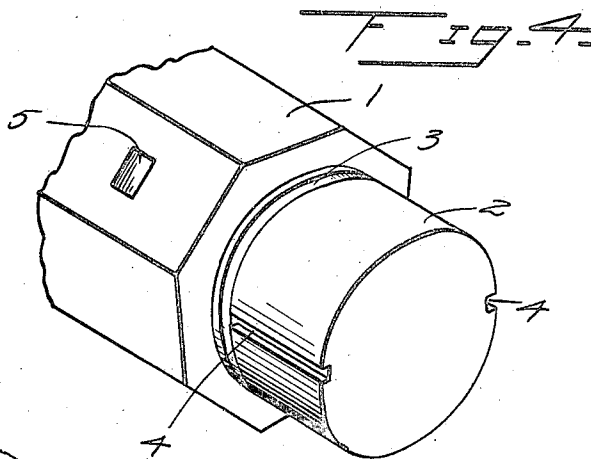
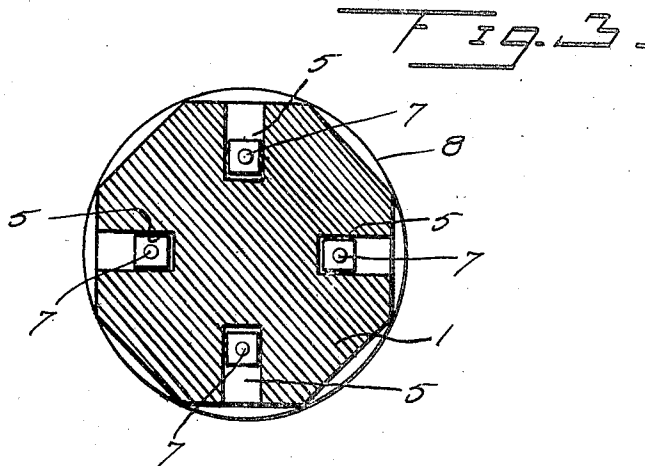
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2 sheets-sheet 2



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UNITED STATES PATENT OFFICE.

WILLIAM T. MELTON, OF QUAY, OKLAHOMA.

GUDGEON.

Application filed January 27, 1921. Serial No. 440,415.

To all whom it may concern:

Be it known that I, WILLIAM T. MELTON, a citizen of the United States, residing at Quay, in the county of Pawnee and State of Oklahoma, 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 appertains to make and use the same.

Jacks and other machinery used in the oil field and in connection with deep wells embodying wooden shafts fitted at their ends with metal gudgeons or journals constitute the subject matter of the present invention.

Because of the strains and stresses and the changes in temperature and moisture to which the shafts are subjected, it is difficult to maintain the gudgeons or journals in proper position and as a result the efficiency of the shafts and gudgeons is comparatively short lived and frequent replacements are made necessary.

The present invention provides a gudgeon and securing means therefor resulting in a substantial and durable structure so that the shaft and gudgeon will have an approximate equal length of service and will not loosen or come apart.

Other objects and advantages will be apparent and suggest themselves as the nature of the invention is understood.

While the drawings illustrate an embodiment of the invention it is to be understood that in adapting the same to meet different conditions and requirements, various changes in the form, proportion and minor details of construction may be resorted to without departing from the nature of the invention.

Referring to the drawings hereto attached,

Figure 1 is a side view of a shaft and gudgeon embodying the invention,

Figure 2 is a longitudinal section on the line X—X of Figure 1,

Figure 3 is a transverse section on the line Y—Y of Figure 1,

Figure 4 is a detail perspective view of an end portion of the shaft, and

Figure 5 is a detail perspective view of the gudgeon as seen from the inner side showing more clearly the grooves for receiving the molten metal.

Corresponding and like parts are referred to in the following description and design-

ated in the several views of the drawings by like reference characters.

The numeral 1 designates a shaft such as used in connection with bull or calf wheels of oil well machinery. The ends of the shaft 1 are reduced as indicated at 2. The metal gudgeons or journals are fitted to the reduced ends 2 of the shaft. In accordance with the invention an annular groove 3 is provided in the reduced end 2 and is preferably disposed near the inner end thereof. Longitudinal grooves 4 communicate with the annular groove 3 and extend outwardly. The several grooves 3 and 4 match with corresponding grooves formed in the inner wall of the gudgeon. A plurality of openings 5 are formed in the sides of the shaft near the reduced ends thereof. The openings 5 communicate with longitudinal openings 6. The openings 6 are provided to receive bolts or like fastenings 7.

The gudgeon comprises a cap 8 and a journal or boss 9. The cap 8 is constructed to fit snugly upon the reduced end 2 of the shaft. An annular groove 10 and longitudinal grooves 11 are formed in the inner wall of the band of the cap. The annular groove 10 matches with the annular groove 3. The longitudinal grooves 11 are in communication with the annular groove 10 and match the longitudinal grooves 4. An opening 12 is formed in the band of the cap and leads into the annular groove 10. Molten metal such as Babbitt is adapted to be poured through the opening 12 when the gudgeon is in position so as to fill the matching grooves and form interlocking means between the gudgeon and shaft. Openings 13 are formed in the end of the cap to receive the bolts 7 and are in coincident position with the openings 6 in the end portion of the shaft.

It is to be understood that both ends of the shaft 1 are similarly constructed and fitted with gudgeons. Obviously the length of the gudgeons and the length and diameter of the reduced ends 2 of the shaft may vary. The gudgeons may be cast or formed in any manner. The gudgeons when in position snugly fit the reduced ends of the shaft. After the gudgeons have been positioned upon the reduced ends of the shaft, molten metal is poured through the opening 12 and flowing into and filling the matching annular and longitudinal grooves form inter-

locking means between the gudgeons and shaft so as to secure the gudgeons in position. The gudgeons are further secured by means of the bolts 7. The bolts 7, after
 5 being passed through the openings 13 and 6, engage nuts 14 disposed in the side openings 5. The bolts 7 supplement the action of the metal in securing the gudgeons in position and furthermore provide means for taking
 10 up any looseness should the same occur from any cause.

From the foregoing taken in connection with the accompanying drawings, it will be understood that the invention provides a
 15 metal gudgeon which may be firmly attached to a wooden shaft and which may be tightened should it become loosened from any cause. As a result the shaft and gudgeon have an approximate equal length of life
 20 of service.

What is claimed is:

1. A shaft and gudgeon having matching grooves, and metal poured into the matching grooves and forming interlocking and securing means between the gudgeon and shaft.
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2. A shaft having an annular groove, a cap fitted on the shaft and provided with a matching annular groove, and metal
 30 poured into the matching grooves and forming interlocking and securing means between the cap and shaft.

3. A shaft and gudgeon provided with annular and intercommunicating longitudinal grooves in matching relation, and metal
 35 poured into the matching grooves and forming interlocking and securing means between the gudgeon and shaft.

4. A shaft having a reduced end formed with an annular groove and intercommunicating longitudinal grooves, a gudgeon fitted
 40 upon the reduced end of the shaft and provided with matching annular and intercommunicating longitudinal grooves, and metal poured into the matching grooves and forming interlocking and securing means between the gudgeon and shaft.
 5. A shaft having a reduced end formed with inter-communicating annular and longitudinal grooves and having side openings
 50 and longitudinal openings extending outwardly therefrom, a gudgeon fitted upon the reduced end of the shaft and formed upon its inner wall with an annular and longitudinal grooves matching the annular and longitudinal grooves of the reduced end of the shaft, nuts disposed in the side openings of the shaft, and bolts passing through the gudgeon and engaging said nuts and forming tightening and securing means.
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 6. A means for rigidly securing a gudgeon to a shaft consisting in a plurality of communicating grooves formed in the shaft and matching with corresponding grooves in the gudgeon, and metal poured into said grooves
 65 in a molten state and permitted to cool and harden therein.
 7. A means for rigidly securing a gudgeon to a shaft consisting in a plurality of communicating grooves extending in different
 70 directions and planes formed in the shaft and matching with corresponding grooves in the gudgeon, and metal poured into said grooves in a molten state and permitted to cool and harden therein.
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In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM T. MELTON.

Witnesses:

HENRY HENSON,
 W. L. CLARK.