J. R. FLANNERY, E. I. DODDS & F. K. LANDGRAF.

STAY BOLT STRUCTURE.

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1,268,828.

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Fig. 1.

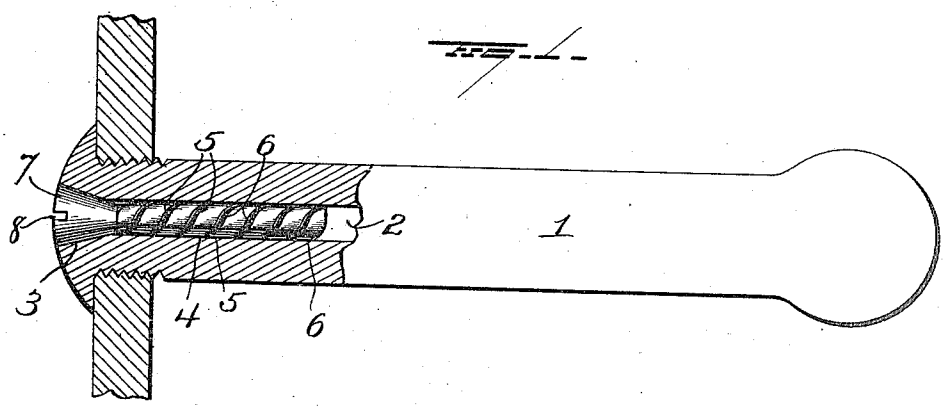
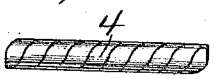


Fig. 2.



WITNESSES

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STAY-BOLT STRUCTURE.

1,268,828. Specification of Letters Patent. Patented June 11, 1918.

Application filed October 25, 1917. Serial No. 198,482.

To all whom it may concern:

Be it known that we, JOHN R. FLANNERY, ETHAN I. DODDS, and FREDERICK K. LANDGRAF, citizens of the United States, and residents of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Stay-Bolt Structures; and we 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.

This invention relates to improvements in staybolt structures for boilers and more particularly to means for testing the same,—the object of the invention being to provide simple and efficient means whereby an attendant may be enabled readily to ascertain the condition of the bolt.

With this object in view the invention consists in certain features as hereinafter set forth and pointed out in the claims.

In the accompanying drawings, Figure 1 is a sectional view of a staybolt structure showing an embodiment of our invention, and Fig. 2 is a view of the expansible tube or container.

1 represents a staybolt for boilers having a tell-tale bore 2,—at one end of which latter may be slightly tapering, as shown at 3.

4 represents an expansible container which may be conveniently formed of a strip of elastic or spring metal coiled spirally into tubular form, as indicated in Fig. 2. This container is packed with soluble material (such as salt) and this material is packed into the container with sufficient pressure to cause the latter to be expanded and its convolutions separated so as to form a spiral slot or opening 5 and thus expose the soluble material 6. The spiral tube thus packed and expanded is forced into the tell-tale bore 2 of the bolt so that it will engage the wall of said bore with sufficient pressure to prevent it from being easily turned. Before thus inserting the device into the tell-tale bore of the bolt, it is firmly attached to the inner end of a plug 7 which, when the tube is in place in the bore 2, will close the inner end of said bore and this plug is provided with a slot or recess 8 for the reception of a suitable tool. The plug 7 and the member 4 may be held together by cement consisting of water glass or talcum.

Under normal conditions when the bolt is whole, the tube 5 will fit tightly into the bore of the bolt so that an effort on the part of an attendant to turn the tube will be met with appreciable resistance, and this will denote that the bolt is in good condition.

Should the bolt become ruptured and thus admit moisture into the bore 2, this moisture will dissolve the material 6 within said tube and thus permit the latter to contract and fit very loosely within the bore of the bolt. The tube may now be very easily turned by the application of a suitable tool to the plug 7 and this easy turning of said tube and plug will indicate to the attendant that the bolt is ruptured.

Having fully described our invention what we claim as new and desire to secure by Letters Patent is:

1. The combination with a staybolt having a tell-tale bore, of an expansible container packed with soluble material, contained within said bore, and means to permit the application of turning force to said container.

2. The combination with a staybolt having a tell-tale bore, of a convolute tube disposed in said bore and packed with soluble material, the convolutions of said tube being normally separated, and a plug attached to said tube and closing the bore of the bolt, said plug adapted for the reception of a tool for applying turning force thereto.

In testimony whereof, we have signed this specification in the presence of two subscribing witnesses.

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Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents Washington, D. C."