J. R. FLANNERY AND E. I. DODDS.

STAY BOLT FOR BOILERS.

APPLICATION FILED FEB. 21, 1917.

1,313,627. Patented Aug. 19, 1919.

Fig. 1.

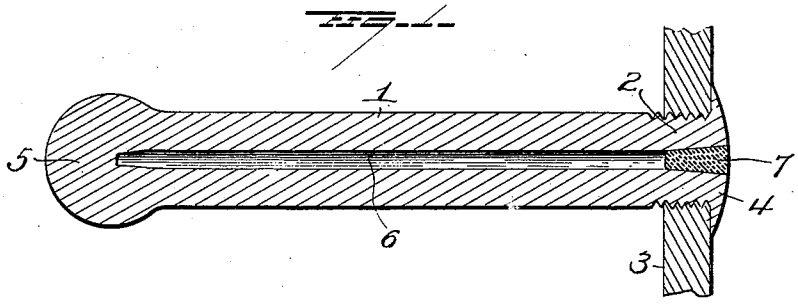
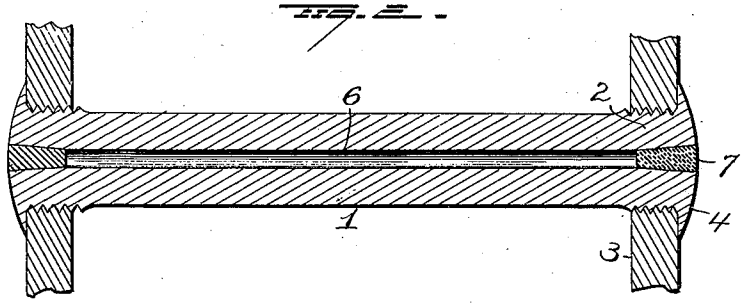


Fig. 2.



WITNESSES

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STAY-BOLT FOR BOILERS.

1,313,627. Specification of Letters Patent. Patented Aug. 19, 1919.

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To all whom it may concern:

Be it known that we, JOHN R. FLANNERY and ETHAN I. DODDS, 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-Bolts for Boilers; 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 in which it appertains to make and use the same.

This invention relates to improvements in staybolts for boilers and more particularly to such as are provided with tell-tale holes.

Heretofore in the construction of flexible stay-bolts for boilers, it has been proposed to provide the bolt with a tell-tale hole, so that in the event of rupture of the bolt, water or steam or both could enter the bore or tell-tale hole and by its presence therein or discharge from the outer end thereof, indicate the ruptured condition of the bolt. We find it undesirable in many instances to permit the tell-tale hole to freely discharge through the outer headed end of the bolt and the efficiency of the tell-tale hole is also reduced by the accumulation of cinders and dirt therein, unless means be provided to prevent the same.

The object of our present invention is to provide a stay bolt structure having a tell-tale hole or bore which shall extend from the inner end of the same and in which said inner end shall be sealed or temporarily closed by a plug which will serve to keep the bore clean; which shall withstand the heat in the fire box for a considerable period, but which seal or plug may be easily removed to permit inspection of the tell-tale hole to determine the condition of the bolt.

With this and other objects in view, the invention consists in certain novel features of construction as hereinafter set forth and pointed out in the claims.

In the accompanying drawings; Figure 1 is a longitudinal sectional view showing a staybolt embodying our invention, and Fig. 2 is a sectional view showing the application of our invention to a somewhat different construction of staybolt.

1 represents the body of a staybolt threaded at its inner end 2 to be screwed to the inner boiler sheet 3 and upset as at 4. In the construction shown in Fig. 1, the bolt is provided at its outer end with a spherical or partly spherical head 5 to have a mounting at the outer boiler sheet, as is well understood. The body of the bolt is provided with a longitudinal bore which forms a tell-tale hole 6 extending from the inner end of the bolt body to the headed end of the bolt and terminating within the head 5, so that if the bolt should become ruptured at any point between the boiler sheets, water or steam or both would be admitted into said tell-tale hole and serve to denote the ruptured condition of the bolt.

In order that the tell-tale hole shall be kept clean, its inner discharge end is temporarily closed by means of a plug 7 which may be removed when it is desired to inspect the tell-tale hole. This plug will be made of a material which will withstand the heat of the firebox for a considerable time but which may be blown out in case a general rupture of the bolt takes place. The plug 7 may be conveniently made of graphite which will serve the purpose as above explained and which may be easily bored out or disintegrated and removed with the use of a suitable tool.

In the construction shown in Fig. 2, the bore 6 extends throughout the entire length of the bolt, with a removable plug 7 such as above described temporarily closing its inner end and a metal plug 8 fixedly secured in and permanently closing said bore at the outer end of the bolt.

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

1. A stay bolt having a tell-tale hole permanently closed at its outer end, and having a removable plug closing the inner end of said tell-tale hole.

2. A stay bolt having a tell-tale hole extending from the inner to the outer end of

the bolt, said hole permanently closed at one end of the bolt and removable means temporarily closing said hole at the other end of the bolt.

3. A headed stay bolt having a tell-tale hole extending longitudinally from the inner end of the bolt into but not through the headed end of the bolt and having a plug in the inner end of said tell-tale hole.

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

JOHN ROGERS FLANNERY.
ETHAN I. DODDS.

Witnesses:
F. H. ALLISON,
EDWIN S. RYCE.