E. I. DODDS.

STAY BOLT STRUCTURE.

APPLICATION FILED OCT. 25, 1917

1,271,865.

Patented July 9, 1918.

Fig. 1.

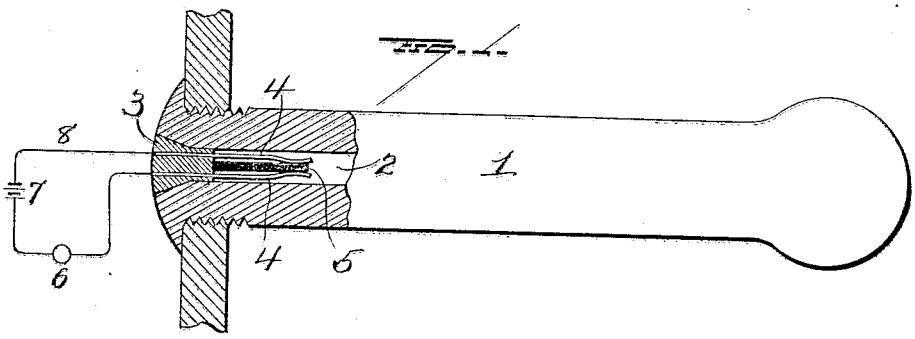


Fig. 2.

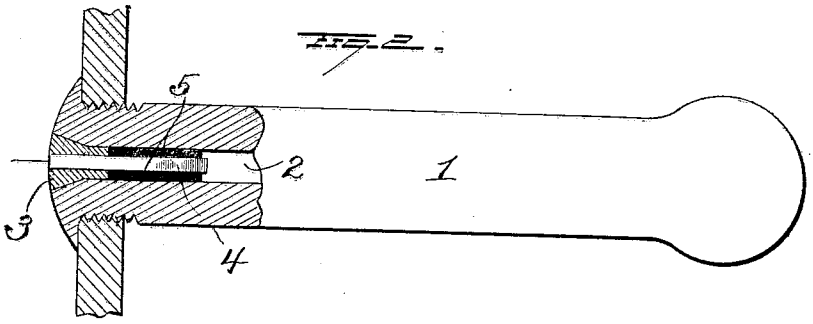
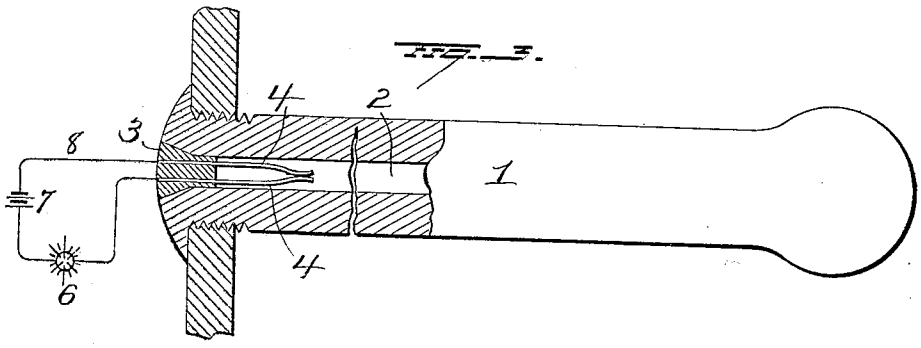


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

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STAY-BOLT STRUCTURE.

1,271,865. Specification of Letters Patent. Patented July 9, 1918.

Application filed October 25, 1917. Serial No. 198,476.

To all whom it may concern:

Be it known that I, ETHAN I. DODDS, a citizen of the United States, and a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Stay-Bolt Structures; 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.

This invention relates to improvements in staybolt structures and more particularly to means associated therewith for indicating or denoting the condition of staybolts for boilers,—the object of the invention being to provide circuit closing means within the tell-tale bore of the bolt which shall be controlled by the admittance of moisture within the said tell-tale bore in the event of a rupture of the bolt, to display a visual signal exteriorly of its structure.

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

In the accompanying drawings, Figure 1 is a sectional view showing the application of my improvements to a stay bolt, the signaling circuit being shown diagrammatically, and the various elements being shown in their normal positions when the bolt is intact. Fig. 2 is a sectional view, taken at right angles to Fig. 1, and Fig. 3 is a view showing the positions of the parts when the bolt is ruptured.

1 represents a staybolt having a tell-tale bore 2, the inner end of which may be somewhat conical to receive a plug 3 of a suitable non-magnetic material, such as a refractory element similar to clay and which may be forced into place under more or less compression.

Two fingers 4, 4, are supported by the plug 3 and extend from the inner end of the latter into the bore 2,—said fingers being made of spring metal and normally tending to move into contact with each other. The plug 3 carries a block 5 of electrically non-conducting soluble material, such as salt, suitably compressed, and this block is normally disposed between the spring contact fingers 4, 4, so as to maintain an electric circuit in which said fingers are included, normally open.

A lamp or other visual signal 6 and a battery 7 are included in electric circuit 8 with the respective fingers 4, 4, as clearly shown in Fig. 1.

When the staybolt becomes ruptured or broken so that moisture will be admitted into the tell-tale hole 2, such moisture will dissolve the soluble block 5 and thus permit the fingers 4, 4, of the circuit closer to contact with each other and thus close the circuit including the signaling device 6 and thereby provide a visual signal which will denote the ruptured condition of the staybolt.

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is:

1. The combination with a staybolt having a tell-tale bore, of a circuit closer disposed in said bore, an electric circuit including said circuit closer and a signal, and a body of non-conducting soluble material normally holding said circuit closer open.

2. The combination with a staybolt having a tell-tale bore, of contact springs located within said bore, a body of non-conducting soluble material normally holding said springs out of contact with each other, and an electric circuit including said contact springs and a signaling device.

3. The combination with a staybolt having a tell-tale bore and a plug of non-magnetic material closing said bore, of contact springs carried by said plug and projecting into the bore to form a circuit closer therein, a body of non-conducting soluble material normally separating said contact springs, and an electric circuit including said contact springs and a signal device.

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

ETHAN I. DODDS.

Witnesses:
F. H. ALLISON,
EDWIN A. RICE.

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