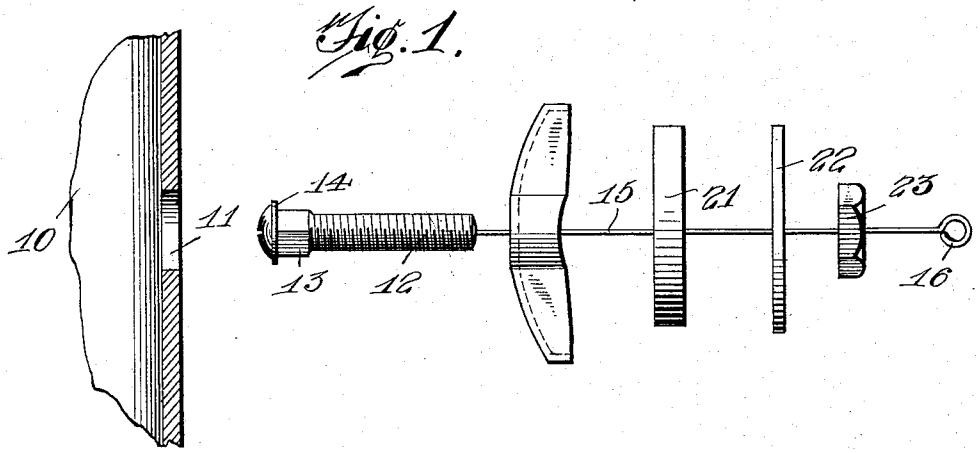
M. O. TRESTER.

REPAIR PLUG.

APPLICATION FILED MAY 11, 1915.

1,172,644. Patented Feb. 22, 1916.

Fig. 1.



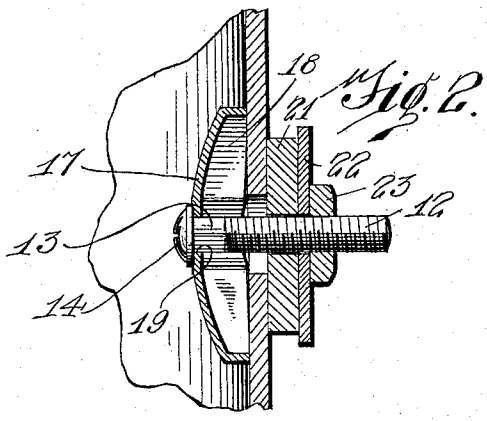


Fig. 2.

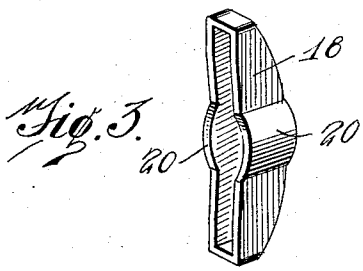


Fig. 3.

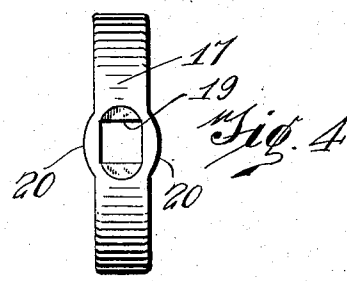


Fig. 4.

Witnesses

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REPAIR-PLUG.

1,172,644. Specification of Letters Patent. Patented Feb. 22, 1916.

Continuation of application Serial No. 797,620, filed October 27, 1913. This application filed May 11, 1915. Serial No. 27,410.

To all whom it may concern:

Be it known that I, MORTON O. TRESTER, a citizen of the United States, residing at Lincoln, in the county of Lancaster and State of Nebraska, have invented certain new and useful Improvements in Repair-Plugs, of which the following is a specification.

My present invention relates to certain new and useful improvements in boiler repair plugs, this being a continuance of my co-pending application relating to repair plugs filed October 27, 1913, Serial Number 797,620.

My present invention pertains to an improved repair plug which is designed to efficiently seal the leak apertures in boilers or like apparatus and includes means for collectively supporting the several co-acting elements during the inserting and repairing operation.

The principal object is to provide such means for supporting the several parts which preferably consists of a soft pliable wire, firstly in order that the catch plate may be operated to attain a position in horizontal alinement with the threaded shank portion, in order to facilitate its insertion into the leak aperture; secondly, to allow the operator to manipulate the device without the danger of being scalded or otherwise injured by the escaping contents of the boiler and finally to facilitate the operation of the entire device.

Various other objects and advantages will become apparent during the following description.

The above and other objects are accomplished by such means as are shown in their preferred form in the accompanying drawings, described in the following specification and more specifically pointed out in the appended claims.

In the accompanying drawings wherein is illustrated the preferred form of my invention and wherein like characters designate like parts throughout the several views, Figure 1 is a view showing a portion of a boiler wall and my improved plug in elevation. Fig. 2 is a sectional view showing an opening in the boiler wall closed by my improved plug. Fig. 3 is a perspective view of the catch plate which is placed within the boiler. Fig. 4 is a rear elevation of the catch plate shown in Fig. 3.

My invention, in its preferred embodiment is preferably used for the purpose of sealing leak apertures which invariably occur in range boilers and the like apparatus, and in view of illustrating more concisely the exact operation thereof, a section of a range boiler has been shown in the accompanying drawings, the same being indicated by the numeral 10 and having a leak aperture 11 formed therein. In connection with devices of this character, serious difficulties have presented themselves, first it has been found that the steam escaping through the leak aperture in the boiler will burn the hand of the operator during the insertion of the catch plate; secondly that after the catch plate is inserted into the boiler, the same is liable to be lost during the fastening of the several washers on that portion of the device projecting exteriorly of the boiler; thirdly that the manipulation of said washers and securing means is greatly impeded by the shortness of the threaded shank and the fact that the same cannot be conveniently held in a correct horizontal position during the fastening operation. Numerous devices have been devised to overcome these various difficulties, the most prominent of which includes a pivoted catch plate which will allow the same to be moved into alinement with the threaded shank portion in order to facilitate its insertion into the leak aperture. This has proven very deficient because of the following reasons. The provision of a pivoted catch plate renders the device entirely too complicated and it has been found that these devices cannot be manufactured and placed upon the market at a reasonable cost. Again it has been found that the catch plate cannot be held efficiently in horizontal alinement with the threaded shank portion in order that it may be quickly and easily inserted through the leak aperture in the boiler.

My invention consists generally of a parent member in the form of an exteriorly screw threaded shank 12. One end of this shank is enlarged to form a squared portion 13 that merges into a suitable head 14. A soft pliable wire 15 extends from the other

end of the shank 12 in substantial alinement therewith, the adjacent end of the wire 15 being secured to the shank in any well known manner. For the purpose of facilitating the manipulation of the apparatus the free end of the pliable wire 15 is curled as at 16.

My invention further consists of a catch plate which comprises a back portion 17 which is bent to form a continuous rim 18 and provided with a central squared opening 19 which is designed to receive the squared portion 13 of the parent member. That portion of the rim which is adjacent the squared opening 19 is curved as at 20 in order to allow the free movement of the shank 12 therethrough during the inserting operation.

In the sealing operation, the parts of the device are arranged substantially in the manner shown in Fig. 1, after which the catch plate is moved to a position that is substantially in alinement with the shank portion 12. When the catch plate is in this position, it will be understood that the wire 15 will be distorted to a considerable extent yet it will be appreciated that the wire may be returned to its normal position to allow the other elements to be moved thereon. After the catch plate is in alinement with the shank portion 12, the shank portion and the catch plate are inserted through the opening 11 after which the shank portion is drawn outwardly through the medium of the wire 15, the portion 13 entering the squared opening 19 of the catch plate, and the head portion engaging the back portion of the catch plate so that the same will be forced into engagement with the inner periphery of the boiler in the manner clearly shown in Fig. 2. When the parts are in this position, the flexible washer 21 is moved over the wire 15 and shank portion 12 until it engages the outer face of the boiler. The rigid member 22 is moved correspondingly until it engages the outer face of the washer 21. After this operation the fastening nut 23 is manipulated about the screw threaded shank 12 in order to frictionally engage the rigid member 22 and securely hold the coacting parts in a secure position. After the leak aperture is securely sealed, the wire 15 may be broken from the shank 12 or it may be wound on the said shank so as to be of use during the removal of the plug.

The greatest stress is directed to the provision of the wire 15 in view of the fact that it collectively supports each of the elements in a manner whereby they may be quickly and efficiently operated.

In reducing my invention to practice I have found that the form referred to herein as the preferred embodiment is the most efficient; yet realizing that certain conditions will necessarily vary in concurrence with the adoption of my device, I desire to emphasize the fact that various minor changes in the details of construction and proportion of parts may be resorted to when required without sacrificing any of the advantages of my invention as defined in the appended claims.

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

1. A device of the character described comprising a shank, a soft wire extending from said shank, a catch plate slidably mounted on said wire and movable upon said shank in substantial alinement with said shank, a sealing washer mounted on said wire and movable upon said shank after said shank and said catch plate are in position and fastening means normally supported by said wire for engaging said shank and said sealing washer, substantially as described.

2. In a device of the character described, a repair plug comprising a parent member consisting of an exteriorly screw threaded shank, one end of said shank enlarged to form a squared portion, a head member carried by said squared portion, a soft pliable wire projecting from the other end of said shank, a catch plate, a sealing washer, a rigid washer and fastening member, said wire normally supporting said elements and allowing said catch plate to be moved to a position substantially in alinement with said shank to facilitate its operation, substantially as described.

3. In a device of the character described, a repair plug including a parent member, said member consisting of an exteriorly screw threaded shank, said shank being enlarged at one end to form a squared portion, a head member formed adjacent said squared portion, a soft pliable wire having connection with said shank and extending therefrom in alinement therewith, a catch plate, a square opening in said catch plate to coöperate with the said squared enlargement, the said catch plate being normally mounted on said wire whereby it may be moved into a position substantially in alinement with said shank and sealing means normally carried on said wire and coöperating with said parent member and said catch plate, substantially as described.

4. In a device of the character described, a repair plug consisting of a parent member including an exteriorly screw threaded shank, a squared enlargement on said shank, a head portion provided adjacent said enlargement, a soft pliable wire carried by said shank portion and extending therefrom in substantial alinement, a catch plate consisting of a back portion, having an annular rim, a squared opening formed in said back portion to coöperate with said squared

enlargement, said catch plate being normally mounted on said wire whereby it may be moved to a position substantially in alinement with said shank, a sealing washer normally arranged on said wire to coöperate with said parent member, a rigid washer normally mounted on said wire to coöperate with said sealing washer, and a fastening nut normally arranged on said wire to coöperate with said shank and retain said washers in a secure position, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

MORTON O. TRESTER.

Witnesses:

GEORGE H. PALMER,

LEWIS H. TRESTER.

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