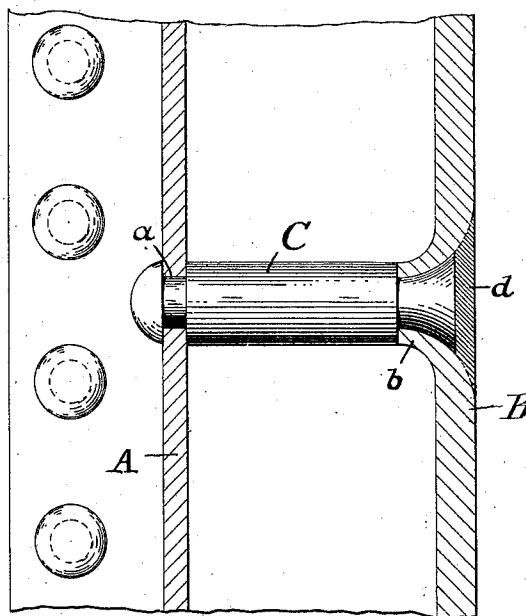


S. W. TRAYLOR.
WATER JACKET.
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985,077.

Patented Feb. 21, 1911.



Attest:

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UNITED STATES PATENT OFFICE.

SAMUEL W. TRAYLOR, OF ALLENTOWN, PENNSYLVANIA, ASSIGNOR TO M. P. SCHANTZ, TRUSTEE FOR THE TRAYLOR ENGINEERING COMPANY, A BANKRUPT.

WATER-JACKET.

985,077.

Specification of Letters Patent.

Patented Feb. 21, 1911.

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To all whom it may concern:

Be it known that I, SAMUEL W. TRAYLOR, citizen of the United States, residing at Allentown, Pennsylvania, have invented certain new and useful Improvements in Water-Jackets, of which the following is a specification.

My invention relates to an improved stay bolt adapted for use in connection with water jackets or in like situations.

The invention consists in the use of a stay bolt shouldered at each end interposed between the head and the fire sheet, the fire sheet being punched or drifted to present an inwardly extending collar, the reduced end of the stay passing through the opening being riveted or upset, and the opening closed by a cap welded to the fire sheet. The opposite end of the stay is headed down in any suitable manner.

In the accompanying drawing I have shown the invention in place, the stay bolt being in side elevation while the head and fire sheet of the water jacket are shown in section.

The head and fire sheet of the water jacket may be of any ordinary or improved construction, my present invention having to do with the stay bolt connecting the two parts. The head is shown at A and the fire sheet at B. The usual openings in the head are represented at *a*, and in the fire sheet, instead of a like opening, I form an inwardly extending collar by punching or drifting the fire sheet, this collar being shown at *b*, providing an opening therethrough to receive the end of the stay bolt C, which is upset to prevent displacement. The opposite end of the stay bolt is headed down as usual. The stay bolt, between the inner face of the head and the inwardly projecting collar of the fire sheet, is made of such diameter as to extend beyond the openings through the head and fire sheet, and to form a substantial stay by presenting shoulders bearing against the head at the one end and the collar at the other end. In order to fill the space left between the end of the stay bolt and the outer face of the fire sheet, I insert a disk or plug *d* which is welded in the flaring opening formed by the flaring recess punched or drifted through the fire sheet, and this makes a flush surface. In welding the disk *d* in place, no space is left between its inner face and the end of the

stay bolt, and there is no danger of the passage of heat to such an extent as to melt the connection.

In the ordinary construction of water jackets where a stay-bolt is used from side to side, riveted over on both sides, it is impossible to prevent the stay-bolts on a fire sheet from burning off and becoming loose and leaking. Further it is desirable that the inner sheet of the jacket should be perfectly smooth, as these jackets often have a large amount of slag or molten metal clinging to the face and require dressing down from time to time, and if the cutting bar or chisel comes in contact with the protruding head of the stay-bolt it springs a leak around the stay-bolt and renders the furnace inoperative. By the present invention this is obviated, the end of the stay-bolt being protected by a sheet of metal welded over the head. This sheet of metal becomes an integral part of the surface of the water jacket and makes a perfectly smooth surface next to the fire sheet. There is nothing more important in furnace construction than having the inner sheet of the jacket smooth, and this the present invention accomplishes.

What I claim is:—

1. A jacket comprising an inside and an outside sheet, the inside sheet being provided with openings having their outer ends closed by plugs welded to the sheet and thereby forming sockets, stay-bolts having one end embedded in said socket and the opposite end engaging the outside sheet.

2. A jacket comprising an inside and an outside sheet, the sheets being provided with oppositely disposed openings, stay-bolts inserted into the openings and terminating at points between the ends of the openings formed in the inside sheet, plugs inserted into the portions of the openings in the inside sheet left unfilled by the bolts, and welded to the inside sheet, the opposite ends of the bolts being secured to the outside sheet.

3. A jacket comprising an inside and an outside sheet, the sheets being provided with oppositely disposed openings, stay-bolts inserted into the openings and terminating at points between the ends of the openings formed in the inside sheet, plugs inserted into the portions of the openings in the inside sheet left unfilled by the bolts, and

welded to the inside sheet, the opposite ends of the bolts being shouldered against the outside sheet and riveted thereto on the outside thereof.

5 4. A jacket comprising an inside and an outside sheet, the inside sheet being provided with an opening terminating in the planes of the opposite faces of the sheet, the outside sheet having an opening opposite thereto, a
10 stay-bolt having its ends inserted in said openings and terminating in the opening of the inside sheet at a point between the opposite faces of the sheet, and a plug inserted into the unfilled portion of the opening
15 in the inside sheet and welded to the sheet, the opposite end of the stay-bolt being secured to the outside sheet.

5. A jacket comprising an inside and an outside sheet, the inside sheet being provided with an inwardly tapering opening
20 terminating in the planes of the opposite faces of the sheet, the outside sheet having an opening opposite thereto, a stay-bolt having its ends inserted in said openings and
25 terminating in the opening of the inside sheet at a point between the opposite faces of the sheet, and a plug inserted into the unfilled portion of the opening in the inside sheet and welded to the sheet, the opposite
30 end of the stay-bolt being secured to the outside sheet.

6. A jacket comprising an inside and an outside sheet, the inside sheet having sockets
35 formed therein provided with closed bottoms, and stay-bolts having one end rest-

ing in the sockets and the opposite end secured to the outside sheet.

7. A jacket comprising an inside and an outside sheet, the inside sheet having openings formed therein, plugs welded to the
40 inside sheet and closing the outer ends of the openings aforesaid, thereby forming suitable sockets, and bolts projecting out of said sockets across the space between the sheets and secured with their opposite ends to the
45 outside sheet.

8. A stay for water jackets and the like, consisting of a bolt having shoulders formed at each end, said shoulders bearing upon the head and fire sheet respectively, the reduced
50 portions of the stay bolt passing through openings in the head and fire sheet and riveted, substantially as described.

9. In combination with a water jacket construction including a head and fire sheet,
55 openings formed therethrough, the opening at one part being flared to form a collar, a shouldered stay bolt between the inner face of one part and the collar of the other part, and having projecting ends riveted in place,
60 and a disk or cap filling the flaring cavity beyond the end of the stay bolt, said disk or cap being welded in place, substantially as described.

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

SAMUEL W. TRAYLOR.

Witnesses:

EDGAR WILLIAMS,

HOWARD E. LINN, Jr.