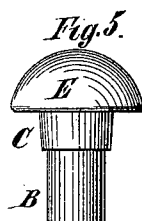
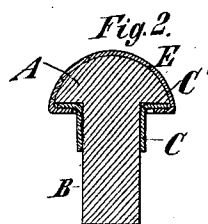
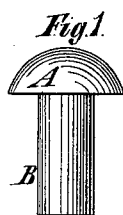


(No Model.)

W. L. BROWNELL.
Rivet.

No. 242,595.

Patented June 7, 1881.



Witnesses
John Becker
Thomas & Birch.

Inventor
Willis L. Brownell,
by his attorneys
Brown & Thorne

UNITED STATES PATENT OFFICE.

WILLIS L. BROWNELL, OF BROOKLYN, NEW YORK, ASSIGNOR TO APPOLLOS SMITH; SAID SMITH ASSIGNOR OF ONE-HALF TO ANNA J. BROWNELL, BOTH OF SAME PLACE.

RIVET.

SPECIFICATION forming part of Letters Patent No. 242,595, dated June 7, 1881.

Application filed November 2, 1880. (No model.)

To all whom it may concern:

Be it known that I, WILLIS L. BROWNELL, of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Rivets for Boilers and other Articles, of which the following is a specification.

The object of my invention is to provide iron or steel rivets with suitable coverings of copper or other metal as a means whereby they may be protected from rust or other damage that might otherwise result from the use of said rivets for particular purposes where they may be required.

My invention is designed principally for embodiment with rivets, to be used in hot-water boilers or other vessels provided with a copper lining, though they may be used for other purposes also.

The invention consists, essentially, in the combination with a rivet of a sheet metal—preferably sheet-copper—covering conforming to the shape of its head, and fitting the same at all parts.

The advantage of my invention consists not only in the comparative strength and cheapness with which rivets having a copper exterior may be made, but also in obviating all the ill effects of rust and chemical action of liquids, &c., upon rivets composed of iron, steel, or their equivalents when fastened in a hot-water boiler or other vessel.

In the accompanying drawings, Figure 1 represents a side view of a rivet destitute of any covering. Fig. 2 is a central longitudinal section of said rivet with a covering embodying my invention applied to it but not secured thereto. Fig. 3 is a central section of a cap forming part of said covering. Fig. 4 represents a central section of a metallic flanged washer or eyelet, forming part of said covering. Fig. 5 represents a side view of a rivet having applied to its head and part of its body my improved covering.

Similar letters of reference designate corresponding parts in all the figures.

A represents the head, and B the body or shank, of a rivet made of iron, steel, or analogous metal, and of ordinary form.

C C' designate a flanged washer or eyelet, forming part of my improved covering. The body C encircles the shank of the rivet, and the flange C' rests close against and covers the back of the head A of the rivet.

E designates a cap, which conforms in shape to and fits at all parts upon the head of the rivet, its edge extending a little past the back of the head of the rivet and past the flange C' of the flanged washer or eyelet C C'. The flanged washer or eyelet and cap are intended to be made of sheet metal—preferably sheet-copper or similar metal—and may be formed by spinning, by stamping in dies, or in any other suitable manner. They are permanently fastened in place by bending or lapping the edges of the cap around and over the flange C' of the flanged washer or eyelet C C' and the head A of the rivet. The flanged washer or eyelet C C' is first slipped over the shank of the rivet with its flange C' bearing against the back of the head, then the cap is placed on the head of the rivet and its edge is turned over the flange C' of the washer or eyelet C C', encircling the shank. By this means the head and a portion of the shank of the rivet are covered and the washer or eyelet and cap covering the same are held firmly in position. The covered portion of the rivets may then be dipped in tin or solder, and the washers or eyelets and caps forming their coverings thereby united more firmly together; or, if desired, their coverings may be tinned before being applied to them. The edges of the cap and flange C' of the washer or eyelet C come together just behind the head or shoulder of the rivet, forming a soft-metal packing, and the body C of the washer around the shank forms an additional soft-metal packing, thus securing a tighter joint around the rivet than could otherwise as easily be made. As the lapped edges of the washer or eyelet and cap when the rivet is in use are between the back of the head of the rivet, and adjacent piece of metal which it is the purpose of the rivet to secure, they will be kept in close contact and the joint be better preserved.

In using the rivets it is intended that the head, which is covered, should be placed in a

suitable form or die on a riveting-bar, so that it will not be knocked flat or out of shape on the bar to the detriment of the covering during the forming of the head on the other end of the rivet.

I am aware that in some cases rivets have been tinned, galvanized, and plated, but such means have generally failed to afford any desirable protection, since the tinning, plating, &c., were apt to be imperfect in places.

By my process a thick metal covering uniform throughout may be applied to those parts of the rivet needing protection.

I provide a rivet that is for many purposes equivalent to a copper rivet, less expensive, and of greater strength than a rivet made wholly of copper.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with a rivet, of a sheet-metal cap covering the head, and a flanged washer or eyelet covering the back of the head and portion of the body of the rivet adjacent thereto, substantially as and for the purpose specified.

2. The combination, with a rivet, of a sheet-metal cap covering the head, and a flanged washer or eyelet covering the back of the head and portion of the body or shank adjacent thereto, the edges of the cap and washer being overlapped, substantially as and for the purpose specified.

WILLIS L. BROWNELL.

Witnesses:

EDWIN H. BROWN,
FREDK. HAYNES.