

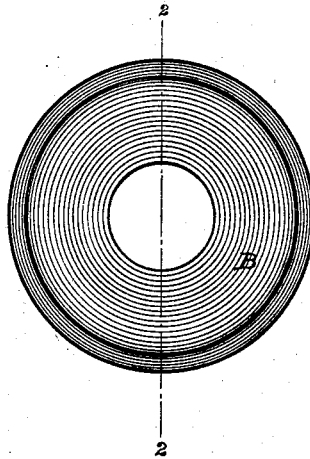
(No Model.)

J. S. HOFFECKER.  
COMPOSITE WASHER.

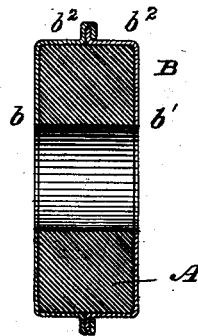
No. 264,536.

Patented Sept. 19, 1882.

*Fig 1*



*Fig. 2.*



WITNESSES  
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INVENTOR  
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# UNITED STATES PATENT OFFICE.

JOHN S. HOFFECKER, OF WILMINGTON, DELAWARE.

## COMPOSITE WASHER.

SPECIFICATION forming part of Letters Patent No. 264,536, dated September 19, 1882.

Application filed July 17, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN S. HOFFECKER, of Wilmington, in the county of New Castle and State of Delaware, have invented certain new and useful Improvements in Composite Washers, of which the following is a specification.

My invention relates to composite washers, especially useful as locks for nuts—such as shown in my Letters Patent No. 207,275, dated August 20, 1878—consisting of a vulcanized fiber washer or body combined with a metallic washer or plate; and my said invention constitutes an improvement upon the composite washer having a body of fiber enveloped at its sides and edges by a flexible metallic plate or casing described and claimed in an application for Letters Patent filed by me July 7, 1882.

The object of my invention is to improve the manner of constructing and applying the flexible metallic casing or envelope to the fiber washer or body.

The subject-matter claimed is first fully described, and then particularly pointed out at the close of the specification.

In the accompanying drawings, Figure 1 is a side elevation of my improved composite washer, and Fig. 2 is a central cross-section thereof.

The main portion A of the composite washer preferably consists of a washer or body of vulcanized fiber—a material well known in the arts—which is enveloped and surrounded at its sides and edges by a thin flexible metallic sheet or casing, B, for the purpose of protecting and strengthening the fiber washer without destroying or interfering with its yielding, elastic, or compressible capacity.

It was at first thought that exposure to the action of the weather was desirable with the use of vulcanized-fiber washers in connection with metal washers to act as nut-locks; but it has been demonstrated by practical use that protection from and not exposure to the weather is necessary, and that it is also highly desirable to strengthen the fiber body without impairing its capabilities and advantages as a washer. To this end I devised the flexible metal casing to cover the edges of the fiber

washer and overlap both the sides thereof. (Shown and claimed in my aforesaid pending application.) In that case the sheet-metal casing or envelope of the fiber washer is in one piece bent from the edges over both sides of said washer, and is thus united thereto to constitute the washer a composite one. In this present example I construct and unite the flexible metallic casing with the fiber body in the following manner: I employ a casing composed of two annular sections or rings,  $b$   $b'$ , of sheet or flexible metal, fitted one to each side of the fiber body, and provided with circular flanges or bent-over portions  $b^2$  to envelope and inclose the edges of said body, as clearly shown in the sectional view, Fig. 2, the flanges  $b^2$  being securely fastened together by crimping or bending one over the other, as clearly shown in the drawings. As thus united it will be obvious that the metal casing cannot readily be separated from the fiber washer, while, owing to the flexibility of the metal casing, the capabilities of the washer to act as a lock to the nut of a bolt is not only unimpaired but improved, as when the nut, which is smaller than the washer, is firmly screwed up against the washer the central part of the washer will be compressed and the portions outside the nut bent slightly over the edges of said nut by the pressing thereof, so as to lock the nut to its bolt in the manner fully described in my aforesaid patent and application. The fiber washer will therefore be protected and strengthened and a superior composite washer produced.

I claim as my invention—

A composite washer consisting of a yielding body, a sectional flexible metallic casing surrounding the sides and edges of said body, and means for uniting the flexible-casing sections together at the edge of the washer, substantially as described.

In testimony whereof I have hereunto subscribed my name this 17th day of July, A. D. 1882.

JOHN S. HOFFECKER.

Witnesses:

WM. J. PEYTON,  
JAMES YOUNG.