

(No Model.)

J. W. GRISWOLD.  
BALE TIE.

No. 418,458.

Patented Dec. 31, 1889.

Fig. 1.

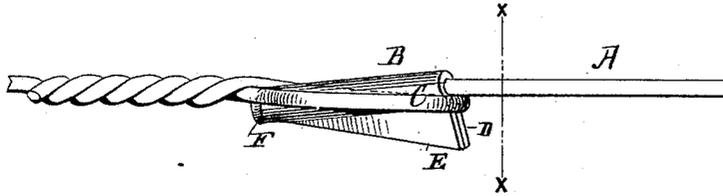


Fig. 2.

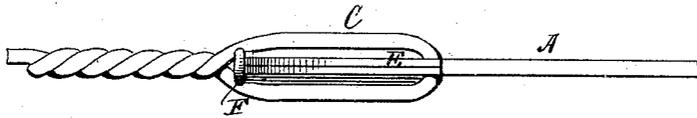


Fig. 3.



WITNESSES:

*Gustave Dietrich*  
*M. Bosch.*

INVENTOR

*John W. Griswold*

BY *Paul Benjamin*  
*his*

ATTORNEY

# UNITED STATES PATENT OFFICE.

JOHN WOOL GRISWOLD, OF TROY, NEW YORK.

## BALE-TIE.

SPECIFICATION forming part of Letters Patent No. 418,458, dated December 31, 1889.

Application filed April 16, 1889. Serial No. 307,458. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN WOOL GRISWOLD, of Troy, New York, have invented a new and useful Improvement in Bale-Ties, of which  
5 the following is a specification.

My invention relates to a new form of tie, such as is used for fastening the ends of the wire bands now commonly used upon hay-  
bales, &c.; and it consists in the construction  
10 of the tie as hereinafter more particularly set forth.

In the accompanying drawings, Figure 1 is a side view of my improved tie. Fig. 2 is a  
plan view, and Fig. 3 a section on the line X  
15 X of Fig. 1.

Similar letters of reference indicate like parts.

A represents the wire which forms the band. B is a hook secured upon one end of said  
20 band, and C is an eye formed upon the other end by twisting in the usual manner.

The hook B is a plate of wrought, struck, or malleable iron, which is bent, doubled, or  
folded over the end of the band so that its  
25 faces come in close contact. The coinciding transverse edges D of said plate form the shoulder with which the eye C engages, as shown in Figs. 1 and 3. The coinciding longitudinal  
30 edges E of said plate are inclined or beveled toward the end of the band, so as to facilitate insertion of the hook within the eye. The end of the band which is inclosed in the hook is preferably slightly bent, so that the edges D stand at an acute angle with  
35 the band. At the end of the band beyond the hook there is formed a head F by upsetting. This prevents the hook from coming off the band. When the hook is placed in

the eye, the head F rests and has a bearing upon the wire forming said eye. When strain  
40 is applied to the band, the eye is jammed into the angle of the hook, and at the same time the head E is forced against the wire of the loop.

I claim—

1. The combination of a wire band, a plate of  
45 wrought, struck, or malleable metal doubled over and compressed upon said band, and an enlargement upon the end of said band, substantially as described.

2. The combination of a wire band having  
50 a bent portion at one extremity, a plate of wrought, struck, or malleable metal doubled over and compressed upon said bent portion, and a head formed by upsetting the end of  
55 said band, substantially as described.

3. The combination of a wire band having  
a head or enlargement formed upon one ex-  
tremity and in rear of said head a plate of  
60 wrought, struck, or malleable metal surrounding said band and not extending beyond said head, substantially as described.

4. The combination, in a tie or fastening  
for wire bands, of the loop or eye C upon one  
65 of the parts to be connected, a hook B, of wrought, struck, or malleable metal, upon the opposite part, and a head F upon the end of  
said part, the said eye engaging with the  
shoulder D of the hook, and the head F hav-  
70 ing a bearing upon the wire forming the loop C, substantially as described.

JNO. WOOL GRISWOLD.

Witnesses:

DAVID COWEE, Jr.,  
JAMES A. HISLOP.