D. CUMMING, Dec'd., A. S. SULLIVAN, Adm'r.

Nut-Lock and Washer for Bolts.

No. 196,113. **Patented Oct. 16, 1877.**

Fig. 1.

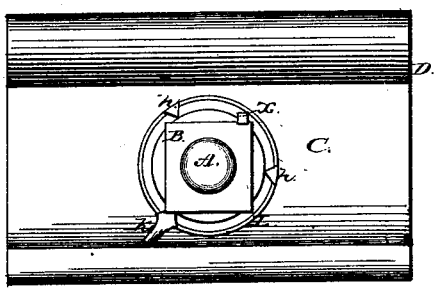


Fig. 2.

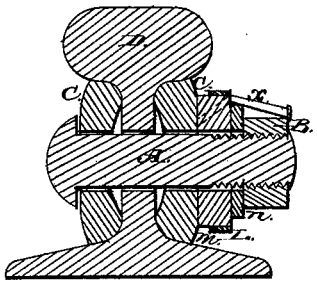


Fig. 3.

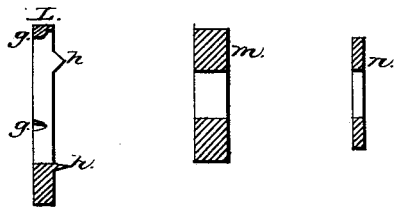


Fig. 4.

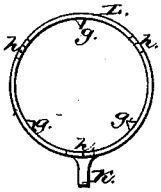
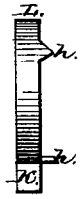


Fig. 5.



Attest:

Moritz Kann.

P. Tenney Gates

Inventor:

David Cumming.

UNITED STATES PATENT OFFICE.

DAVID CUMMING, (DECEASED,) OF NEW YORK, N. Y.; ALGERNON S. SULLIVAN, ADMINISTRATOR.

IMPROVEMENT IN NUT-LOCK AND WASHER FOR BOLTS.

Specification forming part of Letters Patent No. **196,113,** dated October 16, 1877; application filed March 26, 1877.

To all whom it may concern:

Be it known that I, DAVID CUMMING, of New York, in the county and State of New York, have invented a new and useful Improvement in Washers for Bolts, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

My invention is an improvement on the washer for which Letters Patent No. 132,807 were granted to me November 5, 1872, and is for the purpose of more effectually preventing the washer and nut of the bolt turning back, so as to unscrew the nut off the bolt. I use the wood washer with the fibers of the wood parallel, or nearly so, with the bolt, the same as described in my patent aforesaid; but in place of the metal caps used to confine the wood, I use a metal hoop, into which the wood is driven, so as to leave the ends of the fibers of the wood exposed, for the purpose hereinafter set forth.

In the drawing, Figure 1 is a face view of the said washer and parts connected by the bolt. Fig. 2 is a section of the same. Fig. 3 represents the wood washer, its hoop, and metal washer, in section, separately. Fig. 4 is a front view of the hoop, and Fig. 5 a side view of the same.

Similar letters of reference indicate corresponding parts in the different figures.

The bolt A and nut B, I have shown as employed in clamping the fish-plates C C to the railway-bar D. The hoop L has projections *g g g* attached to its inner surface at one of its edges, and teeth *h h h* formed on the other edge. The wood washer *m* is driven into the hoop at the edge having the teeth, the projections thereby being forced into the wood, which will prevent it turning in the hoop. The teeth are then bent into the wood, securing the wood and hoop together.

The wood washer must be thicker than the width of the hoop, or greater in diameter than the nut, so that the hoop will not interfere with the elasticity of the wood.

When the nut is screwed up against the washer, the friction of the end wood against the fish-plate and nut will prevent the washer and nut being started back by vibration, so as to unscrew the nut off the bolt.

To more effectually prevent the nut and washer from turning, I attach the stop *k* to the hoop, which is placed to the left of the bolt, and in contact with the foot of the railway-bar, as shown in Fig. 1. After the nut is turned up to its place the clinch-nail X is driven through the wood washer. The point of the nail, striking the fish-plate, is bent or riveted, so as to hold the nail firmly in the wood. The head of the nail, projecting, is bent against the nut, which will effectually prevent it turning back.

The metal washer *n* is used between the wood washer and nut when the wood is not hard enough to prevent crushing by the nut.

Another stop similar to the stop *k* may be attached to the hoop and placed to the right of the bolt, to prevent the washer turning when the nut is being turned on; but I find that the friction of the wood against the fish-plate will answer that purpose.

I claim as my invention—

1. A wooden washer whose grain is substantially parallel with the axis of the bolt, in combination with a metal hoop inclosing the perimeter, but not the face, of the washer, and provided with means for securing the washer, substantially as described.

2. A wooden washer whose grain is substantially parallel with the axis of the bolt, in combination with a metal hoop inclosing the perimeter, but not the face, of the washer, and provided with means of securing the washer, and in combination with the stop *k* and nail X, substantially as and for the purpose set forth.

DAVID CUMMING.

Witnesses:
D. BARTHOLOMEW,
MORITZ KANN.