

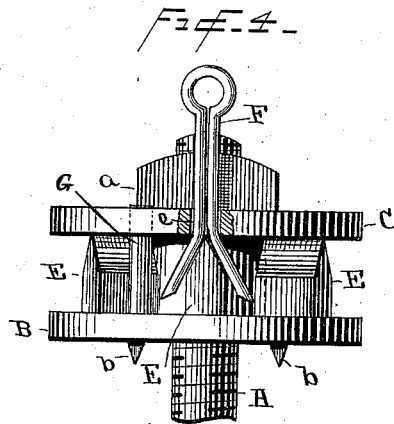
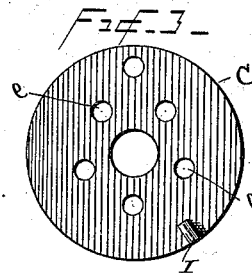
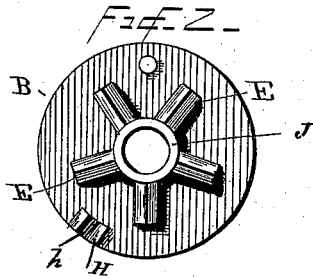
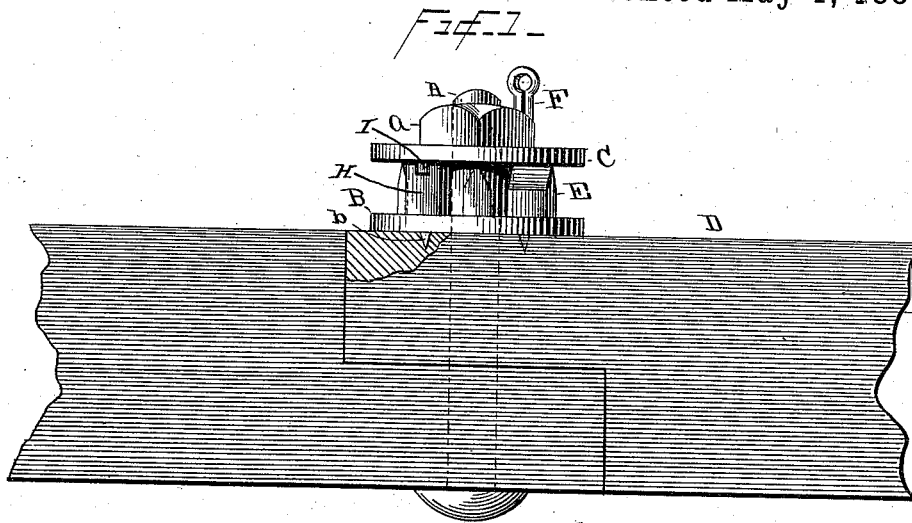
(No Model.)

J. G. WARE.

NUT LOCK.

No. 382,200.

Patented May 1, 1888.



WITNESSES -

Horris A. Clark.  
Van Buren Hillyard.

INVENTOR -

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Attys.



# UNITED STATES PATENT OFFICE.

JOSEPH GEORGE WARE, OF MARENGO, IOWA, ASSIGNOR OF ONE-HALF TO  
JOSEPH G. KRAUTZ, OF SAME PLACE.

## NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 382,200, dated May 1, 1888.

Application filed February 3, 1888. Serial No. 262,882. (No model.)

### *To all whom it may concern:*

Be it known that I, JOSEPH GEORGE WARE, a citizen of the United States, residing at Marengo, in the county of Iowa and State of Iowa, have invented certain new and useful Improvements in Nut-Locks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to nut and bolt locks, and has for its object to provide a means for preventing the loosening of a nut or burr and bolt applied to bars or timbers subject to vibratory motion which can be conveniently handled and readily applied to any ordinary bolt without special construction of the same to adapt it to receive such means.

The improvement consists of two washers and a key, both washers being mounted on the bolt between the timber and burr and interlocking with each other and the lower washer interlocking with the timber. The key passes transversely through the outer washer and rests against the edges of the burr or nut. The two washers are separated or located at a distance apart, and the lower washer is provided with a series of wedge-shaped blocks, which have their edge resting against the under side of the top washer and coming opposite openings in said top washer, through any one of which a key (a split key) is passed, the key being spread by the wedge opposite the opening through which the key is inserted and held from accidental displacement.

The improvement further consists in the peculiar construction and combination of parts, which will be more fully hereinafter set forth and claimed, and shown in the annexed drawings, in which—

Figure 1 is a side view, parts being broken away, of a joint of timber held together by a bolt embodying my invention; Fig. 2, a top plan view of the lower washer; Fig. 3, a bottom plan view of the top washer; Fig. 4, a detail side view, parts being broken away, of the nut-lock, on an enlarged scale.

In the drawings the nut-lock is shown ap-

plied to a bolt which unites the ends of two pieces of timber; but it will be understood that it is applicable to any bolt or burr wherever applied, and that I do not wish to be restricted in its uses. The bolt A and burr or nut a are of ordinary construction. The washers B and C are mounted on the bolt between the timber D and nut a, are located at a distance apart, being separated by the wedge shaped blocks E, which are secured to the lower washer, B, and have their edges bearing against the inner side of the top washer, C. These blocks E are disposed in a circle about the bolt-opening of the washer and extend radially. The top washer is provided with a series of openings, e, corresponding in number and position to blocks E. The edges of the blocks divide the opening into two equal parts, so that when the split key F is passed through any of the openings the ends of its halves will be separated and spread by the block opposite said opening, as shown most clearly in Figs. 1 and 4.

The locking-spurs b, projecting from the rear side of the lower washer, are adapted to embed themselves in timber or enter notches made by a cold-chisel in metal bars and hold said washer from turning in either direction when the nut or burr is screwed home on the bolt.

The openings e and blocks E are held in register when the washers are placed on the bolt by a single pin or rivet, G, or by a block, H, extending from one washer and provided with a recess, h, in its upper edge, and a block, I, projecting from the other washer and adapted to fit in the recess h.

After the bolt is in position, the washers C and B are placed on its projecting end and the nut or burr screwed home. Now the split key is passed through one of the springs, that opening being selected which will admit of the key resting against the edge of the nut or burr, and forced in with sufficient pressure to spread its ends and prevent its withdrawal. The lock is complete, and the burr may be unlocked by withdrawing the key F.

The inner edges of the wedges do not extend quite to the bolt, thus leaving an annular space between said bolt and said ends of the wedges, which is filled by the sleeve or washer J. This washer extends from one washer to the other



and prevents any lateral movement of the washers relative to the bolt.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

5 1. A nut and bolt lock composed of a washer having an opening and a device, as a wedge, located opposite the opening, and a split key adapted to be passed through the said opening and spread by the wedge, substantially as  
10 and for the purpose described.

2. The combination, with the lower washer adapted to interlock with the timber and the upper washer having an opening, of a wedge  
15 secured to the lower washer and having its edge located opposite the said opening and the split key adapted to be passed through the said opening and spread on the wedge, substantially as and for the purpose described.

20 3. The combination, with the lower washer adapted to interlock with the timber and the upper washer having an opening, of the key adapted to pass through said opening and lock

the burr, the upper and the lower washer together, substantially as set forth. 25

4. The combination, with the lower washer having a wedge-block and the upper washer having an opening, of a pin to hold the opening and wedge in register, and the split key, substantially as described. 30

5. The combination, with the lower washer adapted to interlock with the timber and the series of wedge-shaped blocks, of the upper washer resting on the said blocks and provided with a series of openings opposite the  
35 ends of the wedges, the pin for holding the openings and wedge-blocks in register, and the split key, substantially as described, for the purpose specified.

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

JOSEPH GEORGE WARE.

Witnesses:

CHARLES A. WARE,  
JOHN M. ATHEY.