July 15 , 1924. 1,501,149

F. H. THOMPSON

LOCKING MEANS FOR CARRIAGE BOLTS

Filed April 12, 1922

Fig. 1

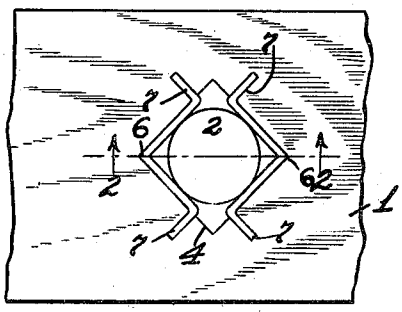


Fig. 4

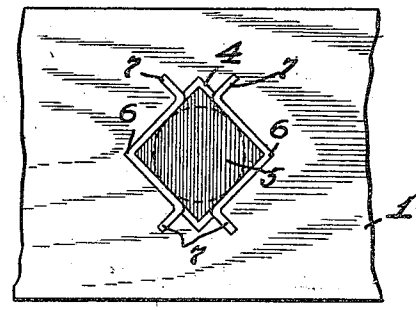


Fig. 2

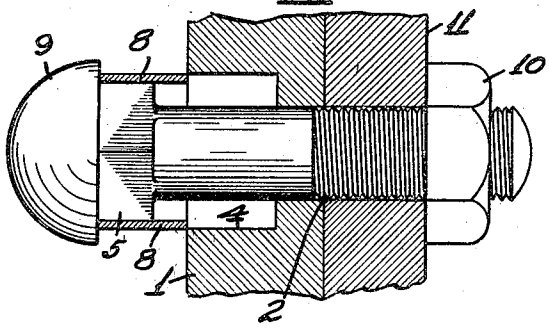
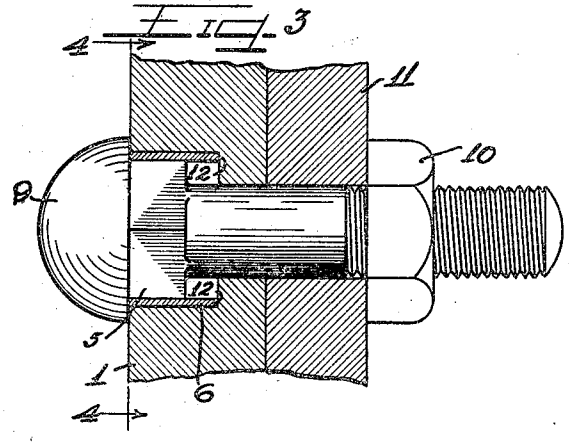


Fig. 3



Witnesses

H. G. Dicks

Inventor

FREDERICK H. THOMPSON

by Charles W. Hills Atty.

Patented July 15, 1924. 1,501,149

UNITED STATES PATENT OFFICE.

FREDERICK H. THOMPSON, OF CHICAGO, ILLINOIS.

LOCKING MEANS FOR CARRIAGE BOLTS.

Application filed April 12, 1922. Serial No. 551,973.

To all whom it may concern:

Be it known that I, FREDERICK H. THOMPSON, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Locking Means for Carriage Bolts; and I do hereby declare that the following is a full, clear and exact description of the same, reference being had to the accompanying drawings, and to the numerals of reference marked thereon, which form a part of this specification.

A carriage bolt is provided with a squared portion close under the head which is intended to prevent rotation of the bolt in the wood while the nut is being turned to tighten the bolt.

When such a bolt is used in old wood or in soft wood there is danger that the wood may yield so that the squared portion of the bolt will no longer hold the bolt from turning. This is particularly disadvantageous when the head of the bolt is in an inaccessible place, for example, underneath the upholstering.

It is an object of this invention to provide a means for preventing the bolt from turning.

It is a further object of this invention to provide an abundant anchorage between said means and the wood so that it shall effectively prevent the bolt from turning even when used with very soft, or very old, or partly decayed wood.

It is a further object of this invention to provide such a fastening means which may be forced into the wood by the action of the bolt itself in being tightened.

It is a further object of this invention to provide a fastening means which is adapted for use with bolts of various sizes.

It is a further object of this invention to provide a reinforcing or fastening means which may be stamped out of sheet metal.

Other and further important objects of this invention will be apparent from the disclosures in the specification and the drawings.

The invention (in a preferred form) is illustrated in the drawings and hereinafter more fully described.

On the drawings:

Figure 1 is a top plan view of a piece of wood prepared for the reception of the bolt, with devices embodying this invention in place thereon.

Figure 2 is a section upon the line 2—2 of Figure 1 showing the bolt and fastening means before the bolt is tightened.

Figure 3 is a similar view showing the bolt tightened all the way home.

Figure 4 is a section upon the line 4—4 of Figure 3.

As shown on the drawings:

The wood 1 which is to receive the bolt has a circular hole 2 bored in it. The portion of the hole nearest the head of the bolt is enlarged into a square recess 4 slightly larger than the squared portion 5 of the shank of the bolt. A pair of W-shaped pieces of sheet metal are placed with their edges against the wood. The middle angles of these pieces have longer sides than the outer ones and are right angles intended to fit one corner of the squared recess 4, as shown at 6. At each end of the sides of the angle 6 the sheet metal is turned outward, as shown at 7. The turned-out portions 7 extend beyond the edges of the square hole 4 so that the sheet metal pieces are maintained by the wood above the hole as shown at 8 in Figure 2.

The bolt is then passed through the round hole, and its squared portion 5 fits the square corners 6 so that the head 9 of the bolt rests against the upper edge of the sheet metal casing. A nut 10 is screwed on to the threaded end of the bolt and contacts with the piece 11 which is to be fastened to the wood 1. As the nut 10 is further tightened the head 9 is thrust against the edges of the pieces 8 and forces the outstanding parts 7 into the wood. As these pieces travel, the sides of the angles 6 enter the corners of the hole 4 until the head 9 contacts with the surface of the wood 1, at which time the lower edges of the sheet metal members will contact with the floor of the square hole 4, as shown at 12 in Figure 3.

The outstanding parts 7 thoroughly anchor the sheet metal members in the wood. The contact of the sides of the angle 6 with the sides of the hole also prevents motion of these members. The sides of the squared portion 5 of the bolt contacting with the interior sides of the angles 6 prevent the bolt from turning. Rotation of the nut 10 therefore cannot cause the bolt to rotate and therefore the nut will always tighten the

bolt and the bolt will not rotate with the nut so that the turning of the nut is never idle.

When the bolt is first put into place the head 9 is available to the workman and he may start the outlying members 7 into the wood by striking the head 9 of the bolt with a hammer. He may, if desired, even drive the bolt all the way home to the position shown in Figure 3 by pounding on the head 9 with a hammer; but after the head 9 has been covered with upholstery or after any other arrangement that makes it inaccessible, if the bolt becomes loose it is necessary to rely upon the turning of the nut 10 to tighten it. The sheet metal members being firmly gripped in the wood are capable of preventing the bolt from turning, so that turning the nut 10 may always be relied upon for this purpose. Whenever the bolt works loose, therefore, either from vibration or other cause, it may always be tightened again by turning the nut 10.

With larger or smaller bolts, the ends 7 will be farther apart or nearer together so that the square hole is more nearly lined with metal in the case of a smaller bolt. The variation in the gap between adjacent ends 7 is sufficient to care for different sizes of bolts so that except for extreme cases it is not necessary to make special sizes of the sheet metal members.

I am aware that many details in the construction may be varied through a wide range without departing from the spirit of this invention, and I therefore do not wish to limit the patent granted otherwise than necessitated by the prior art.

I claim as my invention:

1. In combination, a body of wood having a hole therethrough, said hole having a squared recess at one surface of the wooden body, angular metal members lining said recess, and a carriage bolt, the squared portion of which contacts with said angular metal members.

2. In combination with a carriage bolt, W-shaped pieces of sheet metal having their central angles fitted to the squared part of the carriage bolt, and the outer legs of the W penetrating the wood into which the carriage bolt is inserted.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

FREDERICK H. THOMPSON.

Witnesses:
CARLTON HILL,
JAMES M. O'BRIEN.