

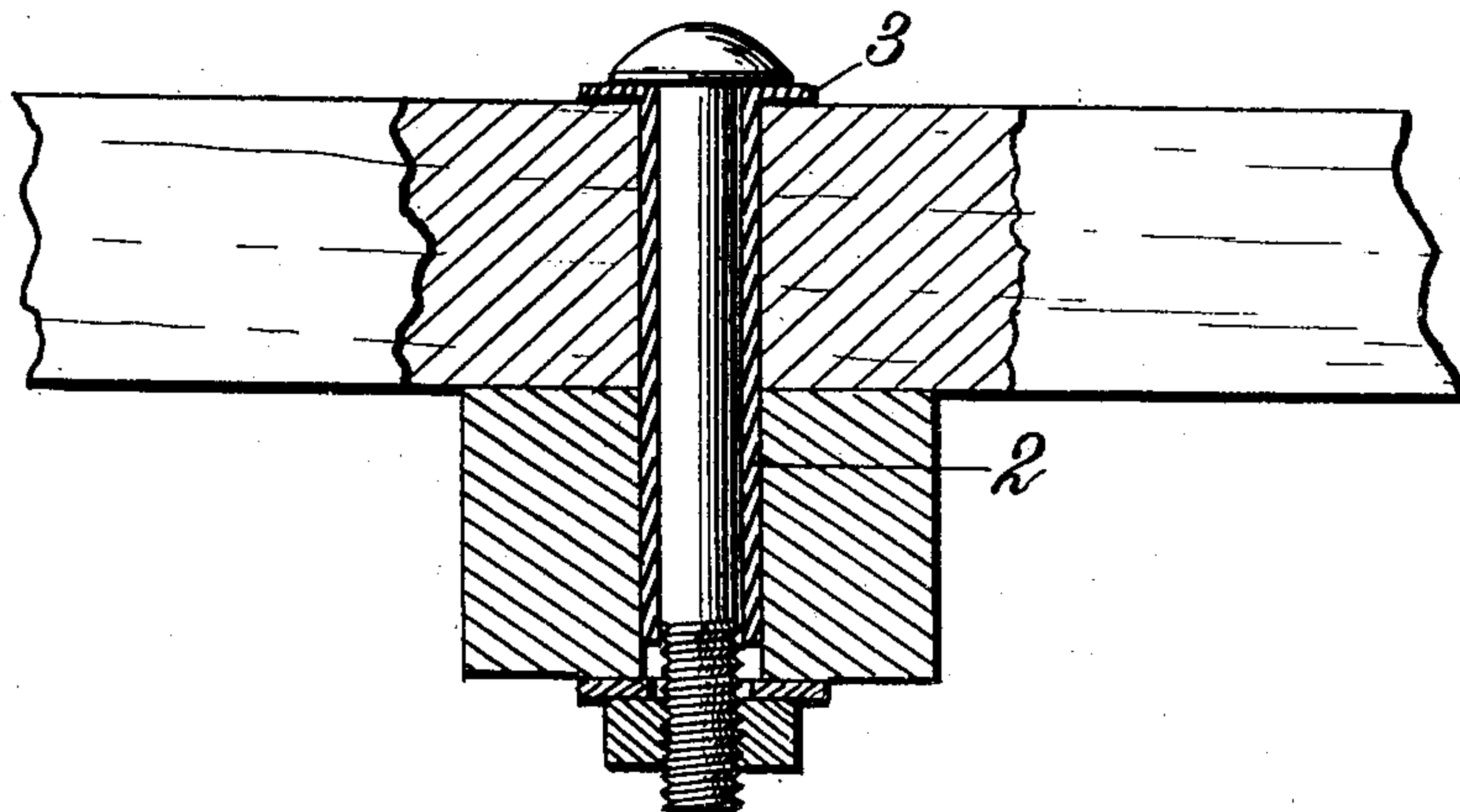
No. 765,139.

PATENTED JULY 12, 1904.

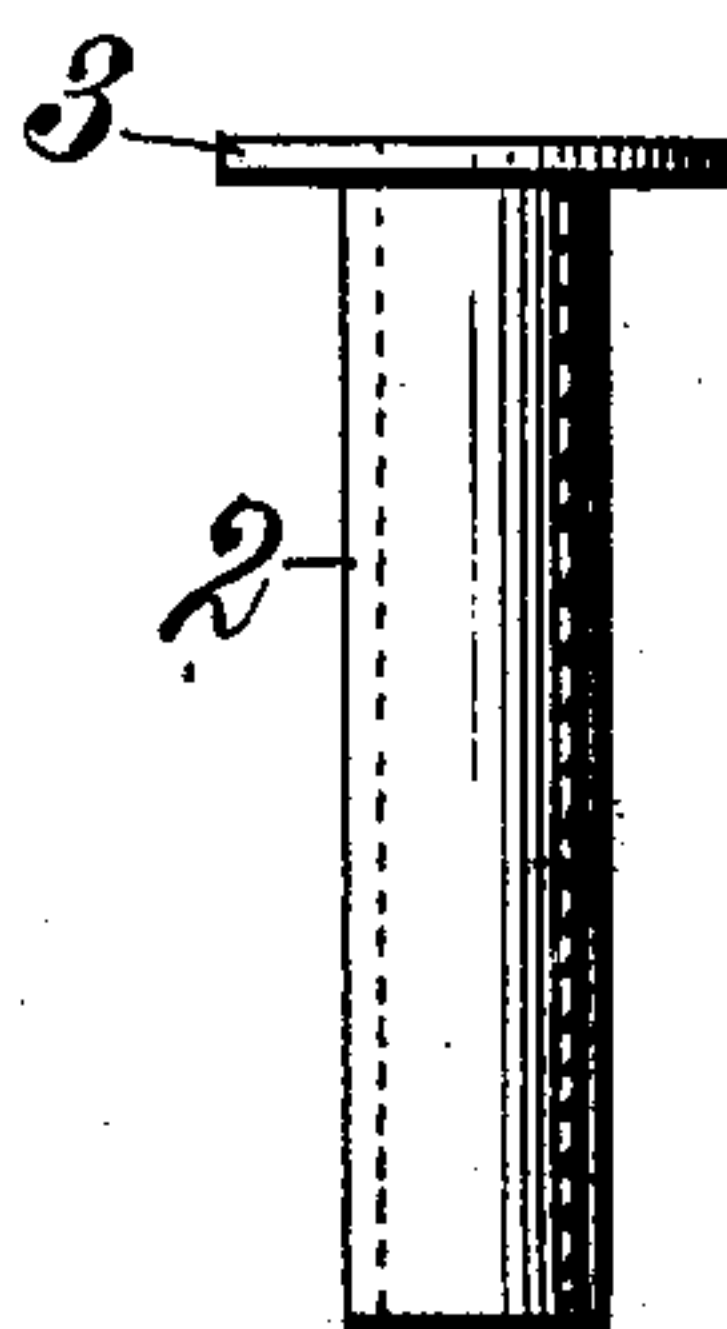
M. HIRSCH.  
REINFORCER FOR BOLTS.  
APPLICATION FILED SEPT. 22, 1903.

NO MODEL.

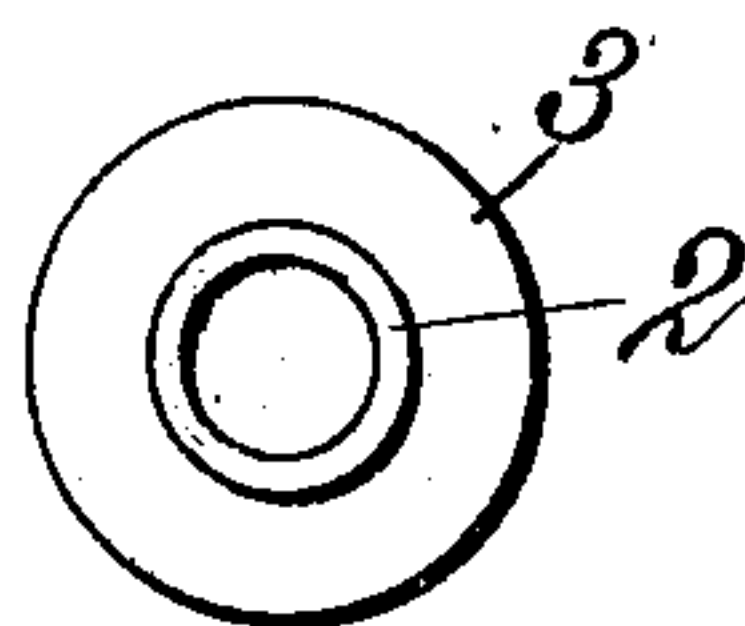
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses,  
*Robert Evans,*  
*James L. Norris, Jr.*

Inventor,  
*Meyer Hirsch,*  
By *James L. Norris,*  
*Att'y.*

# UNITED STATES PATENT OFFICE.

MEYER HIRSCH, OF LASCRUCES, TERRITORY OF NEW MEXICO, ASSIGNOR  
OF ONE-HALF TO OSCAR LOHMAN, OF LASCRUCES, TERRITORY OF  
NEW MEXICO.

## REINFORCER FOR BOLTS.

SPECIFICATION forming part of Letters Patent No. 765,139, dated July 12, 1904.

Application filed September 22, 1903. Serial No. 174,198. (No model.)

*To all whom it may concern:*

Be it known that I, MEYER HIRSCH, a citizen of the United States, residing at Las Cruces, in the county of Donna Ana and Territory of New Mexico, have invented new and useful Improvements in Reinforcers for Bolts, of which the following is a specification.

This invention relates to a reinforcer for bolts; and the object of the invention is to provide a simple, light, and inexpensive device of this character which can be effectively used in a variety of ways and which may be made in different sizes and of materials to suit the particular use to which it is put.

The reinforcer consists of a tubular body provided with a head or crown, the body being adapted to receive the shank of a bolt, while the head or crown is engaged by the head or it may be the nut of the bolt.

Of the materials which may be employed to form the article may be mentioned spring-steel, malleable iron, and brass.

The said article has been found of particular utility in conjunction with railway bridges, culverts, and similar wooden structures which in their uses are subjected to considerable strain and vibration. The tubular body of the reinforcer snugly fits in a bore or hole drilled or suitably formed in a wooden or like body, the shank of the bolt, as hereinbefore indicated, extending through the tubular body and either the head or nut of the bolt fitting against the crown or head of the reinforcer. In other words, the tubular body is made of practically the same size as the hole into which it fits. By providing a reinforcer the bolt is not in direct contact with the wood, so that there is no possibility of the bolt upon its vibration injuring the wood—that is, the shank of the bolt cannot cut the wood or injure the hole in which it fits nor can the head of the bolt cut such wood. It is universally the case where the bolts fit directly in holes in the wood that they enlarge the holes and their heads cut such wood to a considerable extent, so as to materially weaken the structure in connection with which such bolts are used. By the use of the reinforcer the several defects here-

inbefore mentioned are overcome and the life of woodwork is materially prolonged.

In the accompanying drawings, forming a part of this specification, the reinforcer is shown in one simple adaptation thereof, as is also one way of employing the same; but the invention is not limited to the exact structure hereinafter described, and illustrated in said drawings, for certain variations may be made within the scope of the claims succeeding the following description.

Referring to said drawings, Figure 1 is a sectional view of a wooden structure, showing the same equipped with a reinforcer involving the invention, a bolt being illustrated in combination with said reinforcer. Fig. 2 is an elevation of the reinforcer detached. Fig. 3 is what might be considered a bottom plan view of the reinforcer.

The reinforcer shown in the accompanying drawings is made from metal preferably, and it consists of a body 2, provided with a head or crown 3, the two parts being usually made integral. The body 2, which is somewhat resilient or springy in order to resist the jerks and strains of bolts put upon the same, is tubular, it being represented as of a cylindrical form. The inside diameter of the body is made of a size to snugly receive the shank of a bolt, while the outside diameter thereof is of a size to snugly fit the cylindrical hole of a wooden body in which it may be seated. The reinforcer extends entirely through the hole in said wooden body and is to receive the thrust of the bolt. The head or crown 3 is shown as being of annular flat form, and its diameter is slightly greater than that of the head or nut of the bolt in connection with which it may be employed.

In use a hole is first drilled in a wooden body entirely through the same of a diameter to equal the external diameter of the body of the reinforcer. The body of the reinforcer is then driven into the drilled hole until the head or crown of said reinforcer abuts either against the top or bottom of the wooden part. The part 3 is termed a "head" or "crown." This term is adopted simply as a convenient



one, for it is evident that the head or crown may abut against the under side of a wooden body. In the drawings the head or crown is shown as up and the head of the bolt as resting against the upper surface of the same. This arrangement may be of course reversed, for the nut may bear against said head or crown 3.

The reinforcers can be very cheaply made, so that their use adds very little to the cost of construction of a bridge, culvert, or the like. Their advantages, however, offset this slight increase in cost. The reinforcers prevent the bolt absolutely from injuring the wood, and thereby prolong the life thereof. The wooden structures by the use of the reinforcers are not weakened, which is an important point in railway-bridges.

Not only does the reinforcer possess the advantages hereinbefore fully set forth, but it is prevented positively from movement by the bolt. The head of the bolt of course impinges against the flat crown or head 3 of the reinforcer, while the nut in said bolt impinges against the woodwork near the base or foot of said reinforcer, so as to securely retain the latter in place, from which it will be evident that the tubular body 2 is shorter than the shank of the bolt with which it is combined, it extending to a point practically in line or coincident with the innermost thread of the bolt.

In practice the reinforcer is dipped into linseed oil prior to its insertion into a hole, so as to insure the frictionless introduction of the bolt thereinto.

In the opening part of my specification I have stated that the reinforcer for bolts may

be used in a variety of ways. The improvement may be employed with facility in connection with wagons, plows, and other articles.

Having thus described the invention, what I claim is—

1. The combination of two parts, each having a hole the holes being in registration, a tubular body extending into but only partly through the registering holes, having a head at one end fitted against the outer face of one of said parts, a bolt extending entirely through said tubular body, the head of the bolt bearing against said other head, and that end of the tubular body which is within one of said first-mentioned parts being substantially in line with the inner thread of the bolt, and a nut upon the threaded end of the bolt arranged to act against one of said first-mentioned parts.

2. The combination of two superimposed parts having registering holes, a cylindrical body extending partially through said holes, having an annular flat head at its upper end resting against the upper surface of the upper of said two parts, and a bolt extending entirely through said cylindrical body, the head of the bolt bearing against the head of said body, and the lower end of said cylindrical body being substantially in line with the inner thread of the bolt, a nut upon the threaded end of the bolt, and a washer between the nut and the lower of said two parts.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

MEYER HIRSCH.

Witnesses:

ELMER A. CHAFFEE,  
MARY J. CUNIFFE.