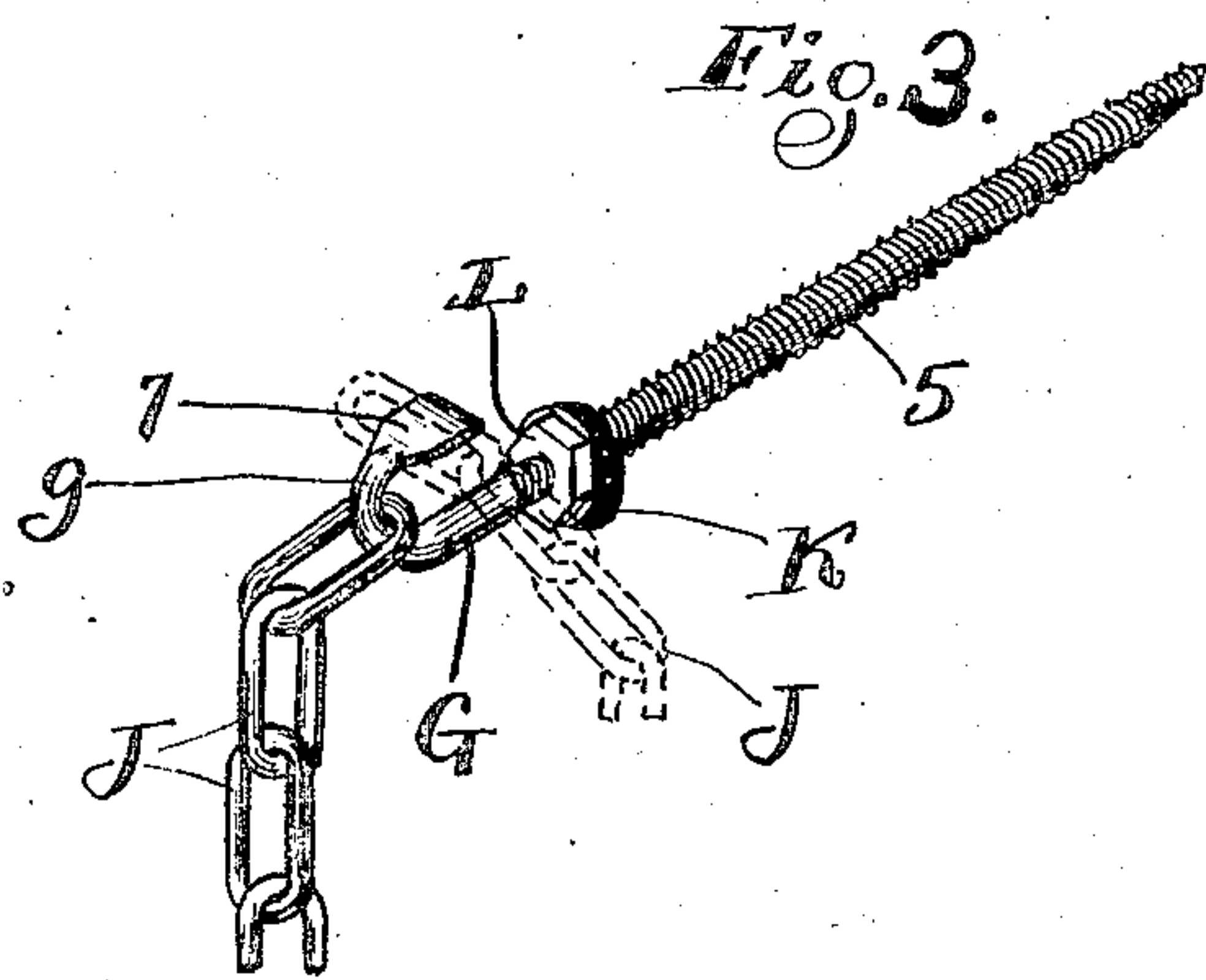
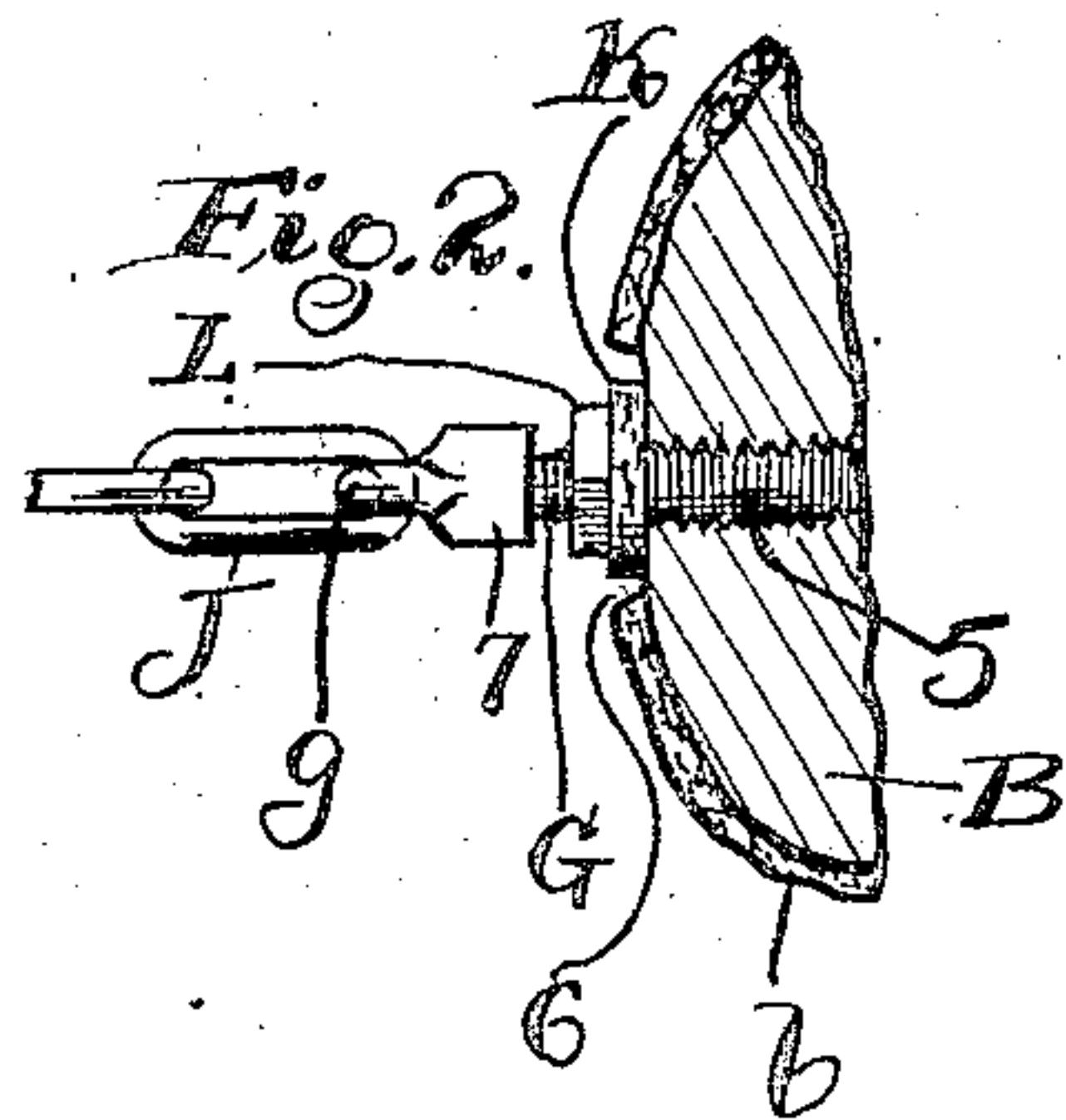
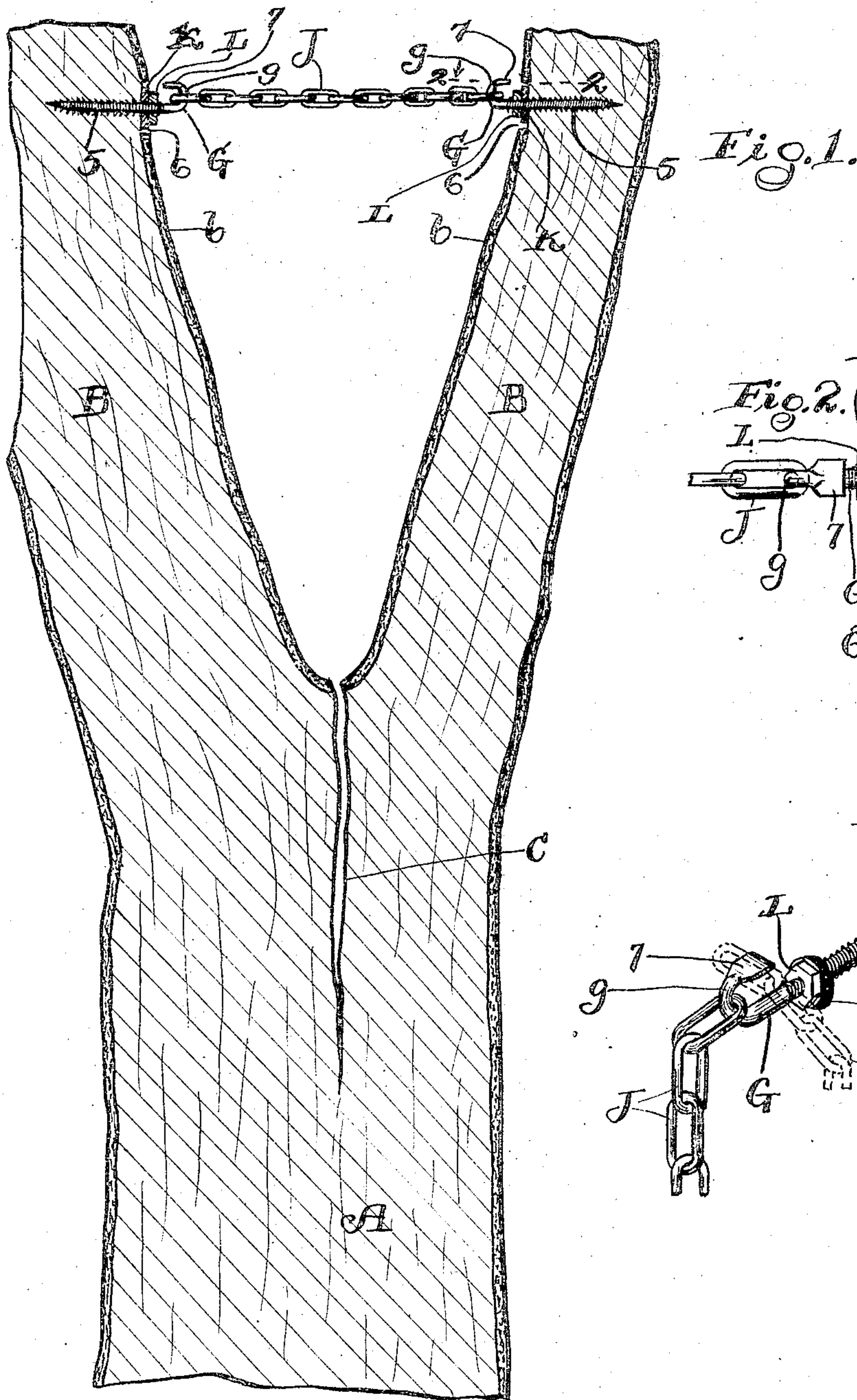


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PATENTED JUNE 16, 1908.

J. A., J. & M. L. DAVEY.  
MEANS FOR TYING TREE BRANCHES TOGETHER.  
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# UNITED STATES PATENT OFFICE.

JAMES A. DAVEY, JOHN DAVEY, AND MARTIN L. DAVEY, OF KENT, OHIO.

## MEANS FOR TYING TREE BRANCHES TOGETHER.

No. 890,967.

Specification of Letters Patent.

Patented June 16, 1908.

Application filed February 8, 1908. Serial No. 414,895.

*To all whom it may concern:*

Be it known that we, JAMES A. DAVEY, JOHN DAVEY, and MARTIN L. DAVEY, citizens of the United States of America, and residing at Kent, in the county of Portage and State of Ohio, have invented certain new and useful Improvements in Means for Tying Tree Branches Together; and we do hereby 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 pertains to make and use the same.

This invention relates to improved means for tying diverging live tree-branches together preparatory to dressing a split or wound at the crotch formed at the inner ends of the said branches and retaining the said branches in position relatively so as to avoid injury to the dressing of the said split or wound by any storm or agency tending to force apart or separate the said branches.

The primary object of this invention is to provide means of the character indicated which is simple, readily applied, reliable in its operation and not liable to injure the tree-branches.

With this object in view, and to the end of realizing other advantages hereinafter appearing, this invention consists in certain meritorious details of construction, and combinations of parts, hereinafter described, pointed out in the claims, and illustrated in the accompanying drawings.

In the said drawings, Figure 1 is a central vertical section illustrating two diverging tree-branches tied together by means embodying our invention. Fig. 2 is a section on line 2—2, Fig. 1, looking downwardly. Fig. 3 is a perspective view of one of the hook-bolts of our improved means and attached end-link of the chain which the said means comprise. Fig. 3 illustrates, in dotted lines, the manner of applying the said chain to the hook-bolts. Figs. 2 and 3 are drawn on a larger scale than Fig. 1.

Referring to the drawing, A indicates the trunk of a live tree which has two branches B and B diverging from the said trunk and is split or wounded, as at C, at the crotch formed at the inner ends of the said branches.

After removing all decayed and foreign matter therefrom the split or wound C is dressed in any approved manner, but obviously the branches B must not only be tied together preparatory to dressing the split or wound but held in position relatively after

the dressing of the split or wound so as to avoid injury to the dressing by any storm or agency tending to force apart or separate the branches.

Our improved means for tying the tree-branches B and B together comprise two hook-bolts G and G and a chain J composed of oblong links. Each hook-bolt G has a shank 5 which is screw-threaded from the free extremity to near the hook-proper *g* of the bolt, and the said hook-proper has its free end-portion 7 flattened and arranged parallel with the shank of the bolt. The two bolts G and G are screwed into the wood of the branches B and B respectively at the opposing sides of the branches and are arranged substantially in line endwise and approximately at a right angle to the branches. The chain J has one of its end-links embracing the hook-proper of one of the bolts adjacent the shank of the respective bolt, and has its other end-link embracing the hook-proper of the other bolt adjacent the shank of the last-mentioned bolt.

The bark *b* of each branch is cut away, as at 6, around the bolt screwed into the wood of the said branch to accommodate the bearing against the exterior of the said wood of a washer K composed of leather, rubber, or other compressible and elastic material, which washer is pressed tightly against the said wood by a nut L mounted on the shank of the bolt so that rain or moisture is positively prevented from entering the hole made in the wood by screwing the bolt into the branch.

The chain J is taut so that it cannot slip off the hook-proper of the bolts. Preferably the two branches B and B, before dressing the split or wound C, are drawn toward each other by block-and-tackle or other means to accommodate the slipping of the end-links of the chain over the hook-provers of the bolts, and the removal of the said block-and-tackle or other means employed in drawing the branches together results in the resumption by the branches of their original position in which the split or wound is open ready to be dressed, and the bolts are so relatively adjusted by screwing them more or less into the branches in order to remove any slack in the chain, whereupon the split or wound is dressed in any approved manner.

To guard against the possibility of displacement of the chain from the hook-bolts, the chain is composed of oblong links as already



indicated and the flattened free end-portion of the hook-proper of each bolt has a width greater than the width of the opening in the end-link attached to the said bolt but measuring less than the length of the said opening so that the said link can only slip over the said portion of the hook-proper by placing the said link in position transversely of the bolt, as shown in dotted lines Fig. 3. Obviously therefore the chain, when once applied to the hook-bolts screwed into the branches, cannot become accidentally detached from the bolts.

What we claim is:—

1. The combination, with two diverging tree-branches, of two bolts provided each with a screw-threaded shank extending into and attached to the different branches respectively, which bolts are tied together; compressible and elastic washers embracing the shanks of the bolts next to the branches, and nuts mounted on the shanks of the bolts and holding the washers tightly against the branches.

2. The combination, with two diverging tree-branches, of two hook-bolts provided each with a screw-threaded shank extending into and attached to the different branches respectively; a chain attached to each bolt at the hook-proper of the bolt and forming a connection between the bolts; washers embracing the shanks of the bolts next to the branches, and nuts mounted on the shanks of the bolts and holding the washers tightly against the branches.

3. The combination, with two diverging tree-branches, of two hook-bolts provided each with a shank extending into and attached to the different branches respectively, which bolts are arranged substantially in line endwise and approximately at a right angle to the branches, and a chain composed of links and having one end-link thereof embracing the hook-proper of one of the bolts adjacent the shank of the respective bolt and having its other end-link embracing the hook-proper of the other bolt adjacent the shank of the last-mentioned bolt.

4. The combination, with two diverging tree-branches, of two hook-bolts attached to the different branches respectively at the op-

posing sides of the branches; a chain composed of oblong links and having one end-link thereof embracing the hook-proper of one of the bolts adjacent the shank of the respective bolt and having its other end-link embracing the hook-proper of the other bolt adjacent the shank of the last-mentioned bolt, and the free end-portion of the hook-proper of each bolt being flattened and having a width which is greater than the width of the opening in the link attached to the said bolt but less than the length of the said opening.

5. The combination, with two diverging tree-branches, of two hook-bolts provided each with a screw-threaded shank screwed into the different branches respectively at the opposing sides of the branches, which bolts are arranged substantially in line endwise; a chain composed of oblong links and having one end-link thereof embracing the hook-proper of one of the bolts adjacent the shank of the respective bolt and having its other end-link embracing the hook-proper of the other bolt adjacent the shank of the last-mentioned bolt; compressible and elastic washers embracing the shanks of the bolts next to the branches, and nuts mounted on the shanks of the bolts and holding the washers tightly against the branches, and the free end-portion of the hook-proper of each bolt having a width which is greater than the width of the opening in the link attached to the said bolt but less than the length of the said opening.

Signed by said JAMES A. DAVEY at Amherst, Massachusetts, the 27th day of January, 1908, and by said JOHN DAVEY and MARTIN L. DAVEY, at Cleveland, Ohio, the 4th day of February, 1908.

JAMES A. DAVEY.  
JOHN DAVEY.  
MARTIN L. DAVEY.

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Witnesses to signatures of John Davey and Martin L. Davey:  
C. H. DORER,  
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