

O. CROSBY.
 ROPE CLAMP.
 APPLICATION FILED MAY 26, 1919.

1,373,800.

Patented Apr. 5, 1921.

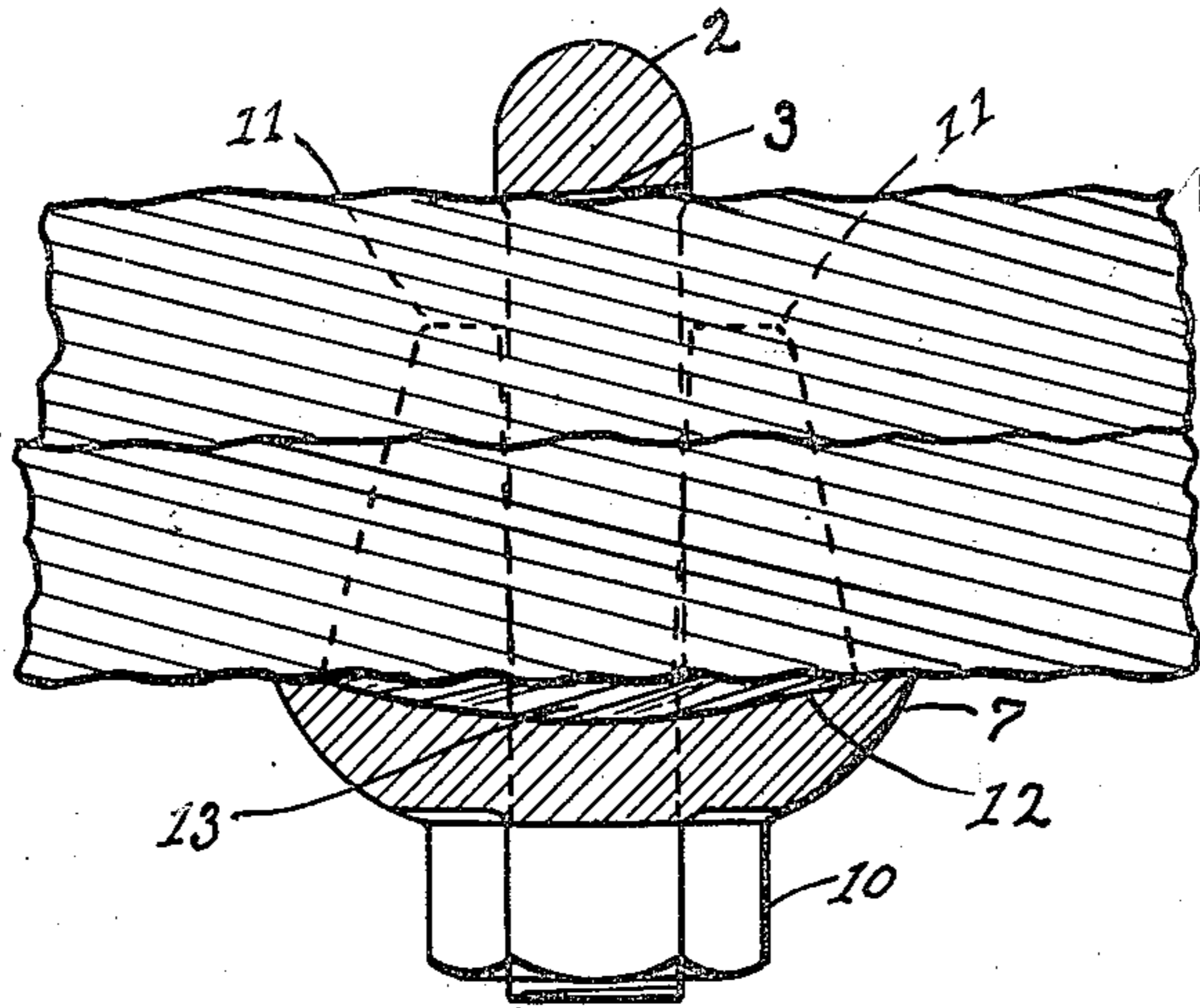


Fig. 1

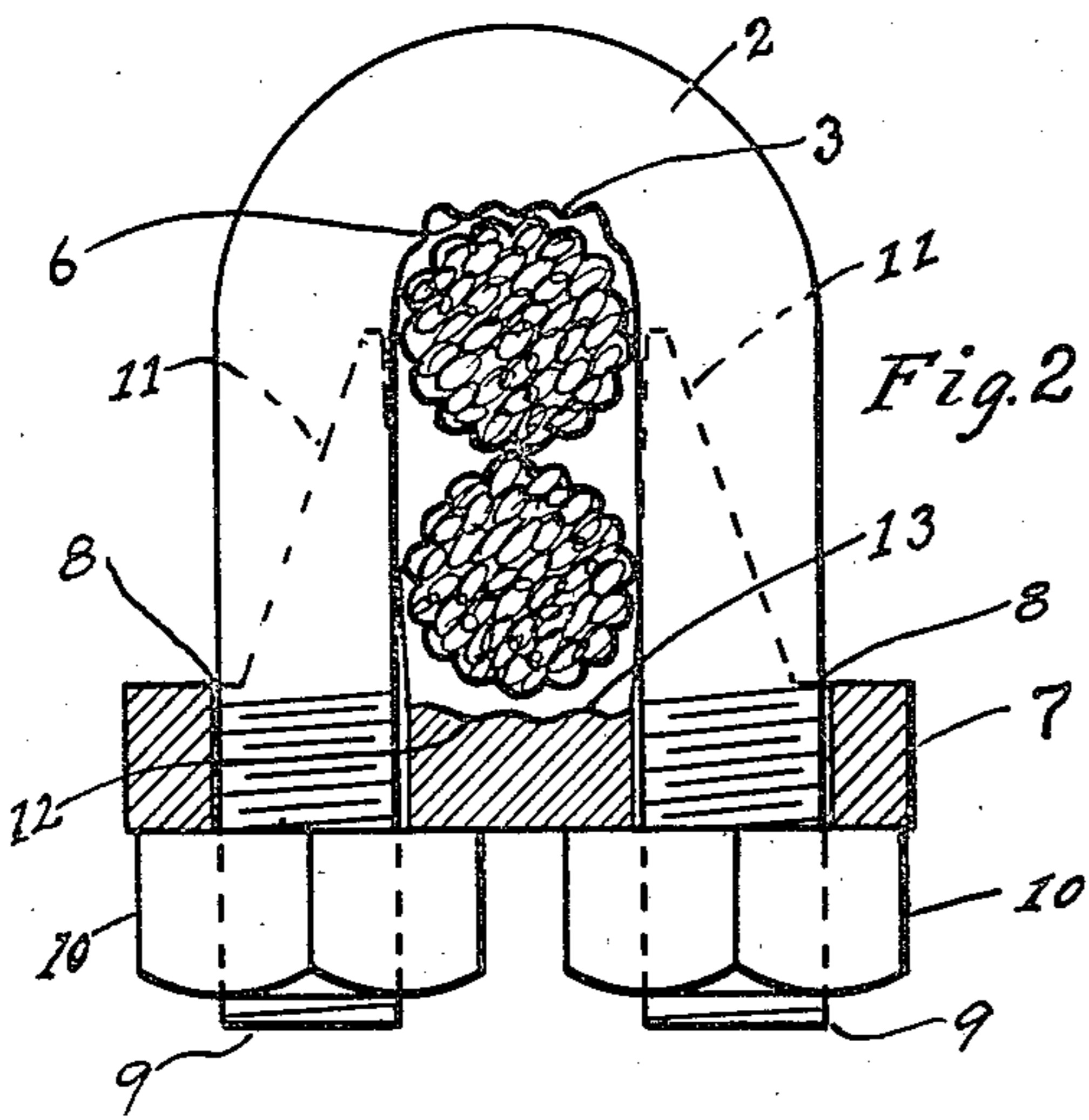


Fig. 2

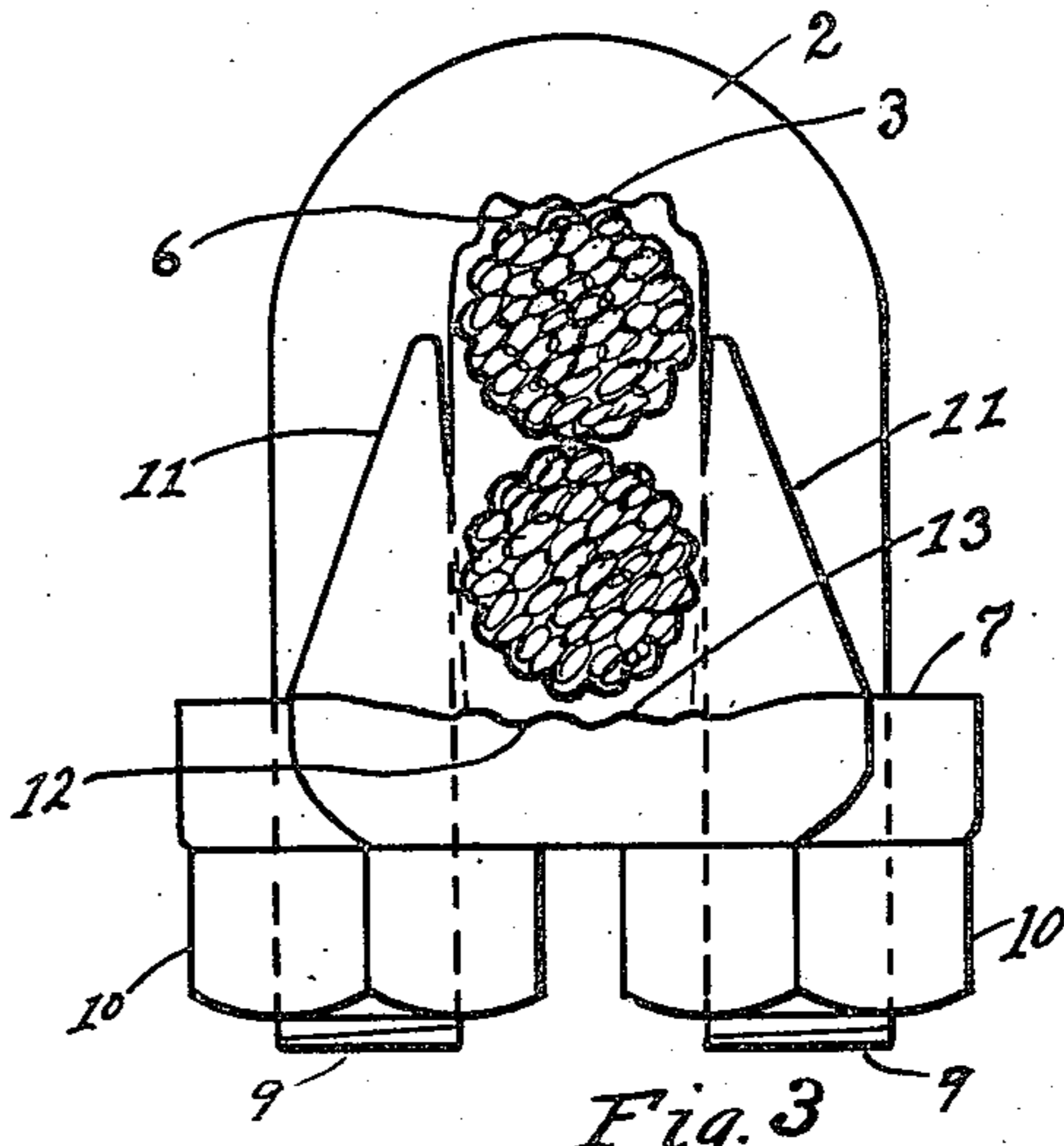


Fig. 3

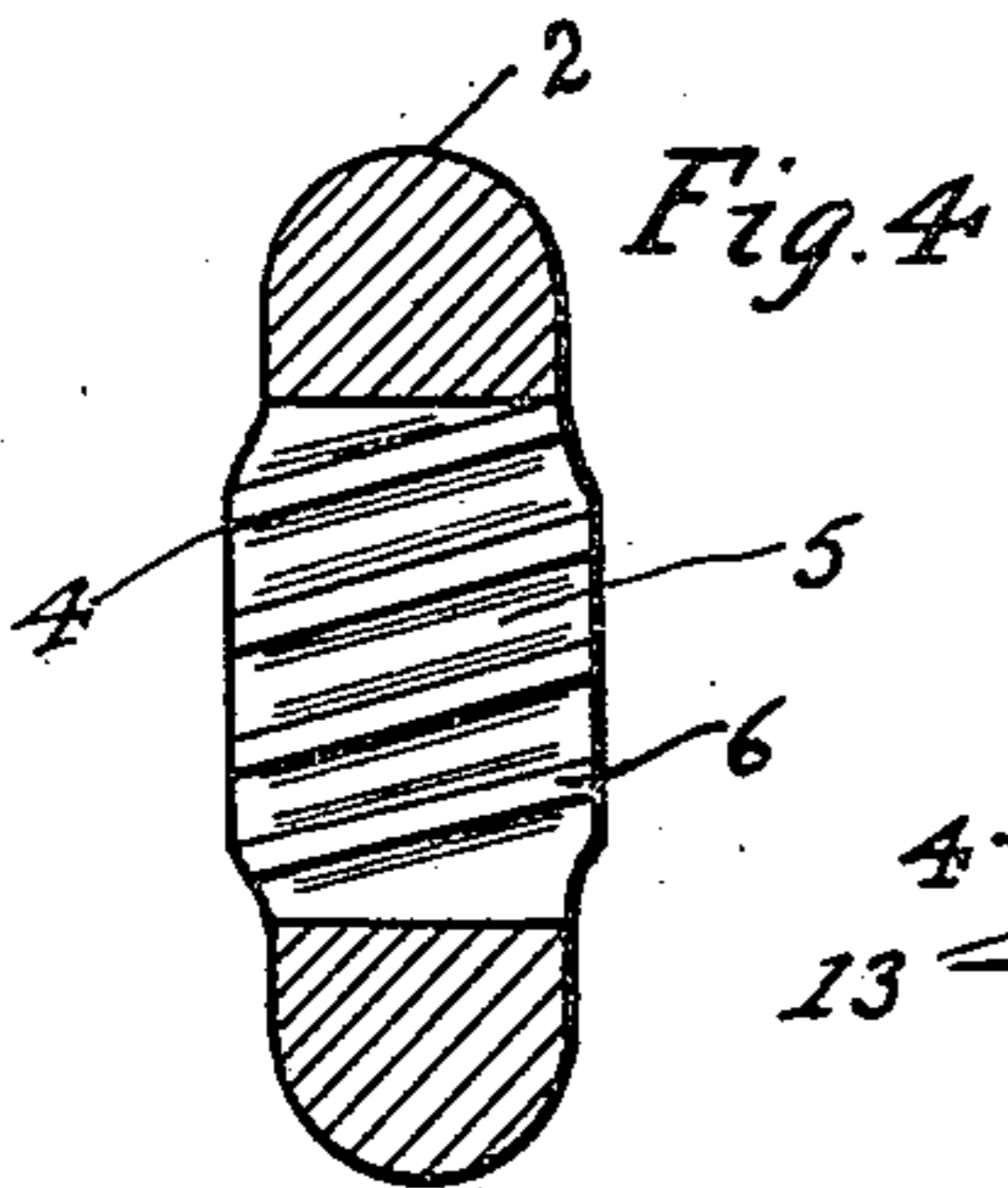


Fig. 4

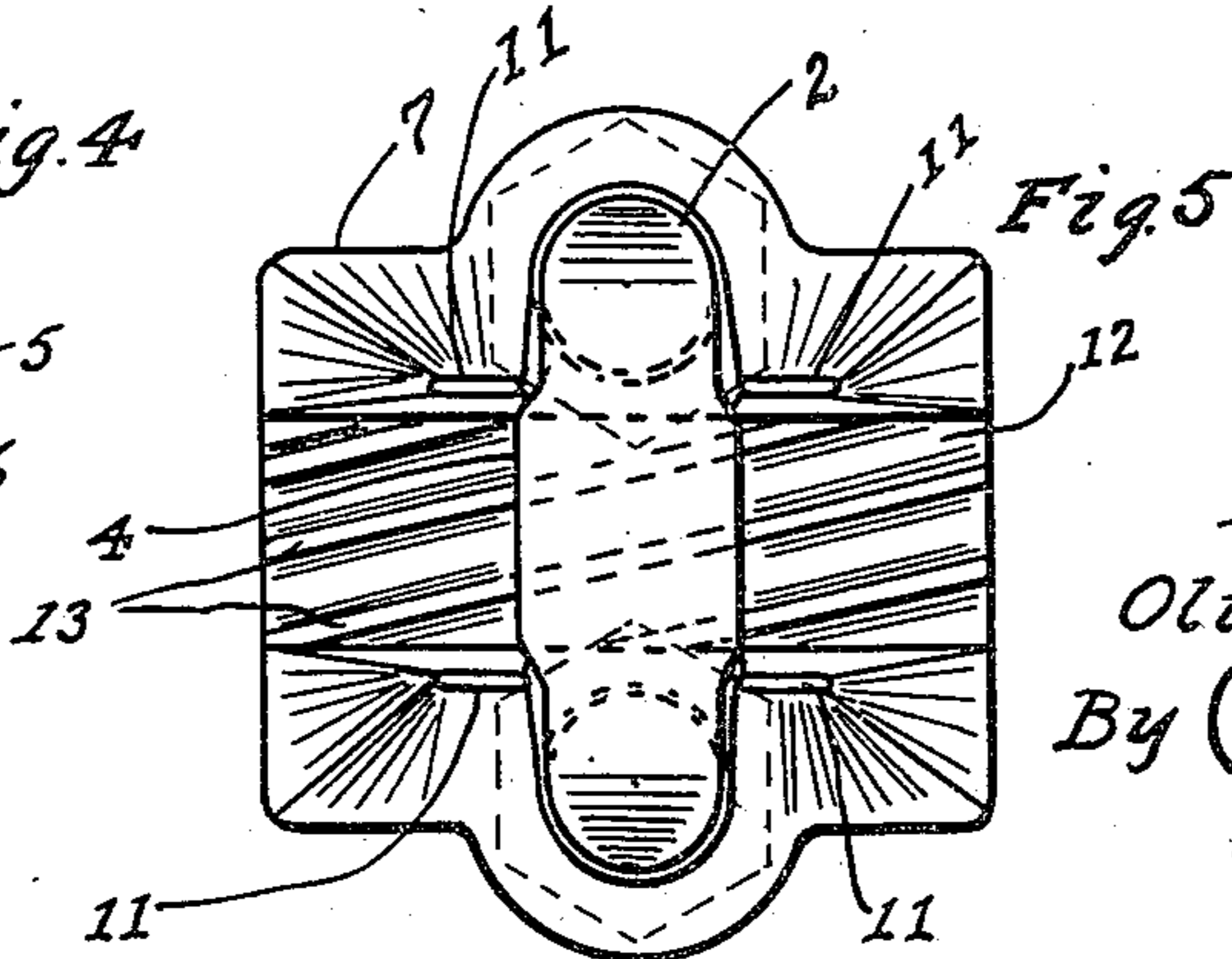


Fig. 5

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UNITED STATES PATENT OFFICE.

OLIVER CROSBY, OF ST. PAUL, MINNESOTA, ASSIGNOR TO AMERICAN HOIST & DERRICK CO., OF ST. PAUL, MINNESOTA, A PARTNERSHIP.

ROPE-CLAMP.

1,373,800.

Specification of Letters Patent.

Patented Apr. 5, 1921.

Application filed May 26, 1919. Serial No. 299,684.

To all whom it may concern:

Be it known that I, OLIVER CROSBY, a citizen of the United States, resident of St. Paul, county of Ramsey, State of Minnesota, have invented certain new and useful Improvements in Rope-Clamps, of which the following is a specification.

My invention relates to that class of rope clamp shown and described in Letters Patent of the United States No. 1,271,284, issued to the American Hoist & Derrick Co., the assignee, the 2nd day of July, 1918.

The object of my present invention is to provide a U-bolt having a broader, flatter bearing surface than usual in rope clamps of this kind to the end that the U-shaped portion of the bolt will have a firmer, better bearing on the cable and be more likely to hold the cable securely against slippage.

A further object is to provide a clamp in which the body portion thereof is provided with a comparatively large area for contact with the rope to be clamped.

Other objects of the invention will appear from the following detailed description.

The invention consists generally in various constructions and combinations, all as hereinafter described and particularly pointed out in the claims.

In the accompanying drawings forming part of this specification,

Figure 1 is a view, partially in section, showing by improved clamp in position for use,

Fig. 2 is a sectional view through the clamp, before the U-bolt is tightened, showing the broad flat bearing surfaces between which the rope or cable is gripped and held,

Fig. 3 is a similar view of the clamp showing the position of the lugs thereon arranged in pairs upon opposite sides of the U-bolt,

Fig. 4 is a sectional view through the U-bolt, showing the broad flattened bearing surface at the bend of the bolt,

Fig. 5 is a plan view showing the relative position of the lugs on the base of the body of the clamp.

In the drawing, 2 represents the U-shaped portion of the clamp. This is preferably formed by bending a straight piece of metal and prior to the bending operation the surface of the piece of metal, preferably near the middle thereof, is flattened and pressed outwardly by means of a suitable die to

form a broad surface 3 midway between the ends of the U-bolt, and the pressure of the die forces the metal outwardly on each side, as indicated at 4 in Fig. 4, thereby considerably increasing the area of the surface of the bolt with which the cable comes in contact. Obviously, where there is frictional engagement between two members, the greater the area of the bearing surface the greater the friction and the more securely the lapping ends of the cable will be held. In this particular case the die is preferably fashioned to press the metal outwardly on each side, as shown in Fig. 4, and on the flattened surface 5 of the bolt I provide a series of ribs 6 which are adapted to fit the lay of the rope or cable; that is, when the bolt is moved to its clamping position the obliquely arranged ribs will register with the depressions or grooves running diagonally of the surface of the rope or cable and serve as an effective means for preventing slippage when the rope is subjected to strain. I regard this flat surface intermediate to the arms of the U-bolts as an important feature of my present invention, as usually the U-bolt at the bearing point is round in cross section and has only a comparatively small bearing on the rope or cable.

7 represents a block forming the base of the clamp having holes 8 therein to receive the arms 9 of the U-shaped bolt, said arms being threaded to receive lock nuts 10 which when turned up against the under surface of the block will firmly grip the U-bolt with the cable and prevent slippage thereon. On each side of the U-bolt, projecting upwardly from the base, is a lug 11, there being preferably four of these lugs for each base, sufficient space being provided between the lugs to receive the ends of the cables to be joined and form bearings or stops against which the arms of the bolt are seated when the clamp is under a severe strain. I prefer to arrange these lugs so that the bolt will be supported thereby and will not be bent or twisted out of its normal position or shape when subjected to severe strain. As heretofore stated, the broad bearing surface of the bolt is formed by the pressure of a die on the metal bar of which the bolt is composed, such pressure being sufficient to spread the metal outwardly and form bosses or extensions on each side of the bolt and at the same time materially increase the area

of its bearing surface. This is all done preliminary to bending the bolt into U-shape by any suitable die or mechanism for the purpose.

5 In Figs. 2 and 3 I have shown the parts of the clamp assembled but without tightening the nuts of the U-bolt, the bolt and the base being shown out of contact with the cable to more clearly illustrate the shape of
10 the gripping surfaces.

In Fig. 1 the U-bolt is shown seated on the cable but the bend or kink in the cable to fit into the depression of the base 7 is omitted, as this would only appear when the
15 nuts of the U-bolt are tightened and the cable securely gripped.

The base 7, preferably of a drop forging, is provided with a surface 12 for contact with the cable, having ribs 13 running diagonally thereof and preferably slightly concave so that when pressure is applied by the
20 U-bolt, the cable will be bent into the concave and kinked slightly, making it less likely to slip in the clamp. The ribs 13
25 are formed to fit the surface of the rope or cable in the same manner as described with reference to the ribs of the U-bolt and I have found that by making these ribs or corrugations gradually fit the twist of the
30 rope there is less danger of damage to the rope and the clamp holds it more securely. This concave feature of the base may, however, be omitted, if preferred, and the surface may be made flat or any suitable shape
35 to fit the surface of the cable seated thereon, the essential feature of my invention being the formation of the bolt with the broad, flattened bearing surface of the cable. This
40 broad surface through its ribs or corrugations firmly engages the surface of the cable and locks it securely against slippage and thereby the value of the device as a rope clamp is considerably enhanced.

I claim as my invention:

45 1. A rope clamp comprising a U-shaped

bolt, a block slidable thereon, clamping nuts for the ends of said bolt, the curved or middle portion of said bolt having a broad flattened surface formed thereon for contact
50 with the cable to be clamped.

2. A rope clamp comprising a U-shaped bolt, a block slidable thereon, clamping nuts for the ends of said bolt, the curved or middle portion of said bolt having a broad
55 flattened surface formed thereon for contact with the cable to be clamped, said surface having ribs or corrugations extending obliquely thereon.

3. A rope clamp comprising a bolt to straddle the cable to be clamped, a block
60 slidable on the ends of said bolt, clamping nuts for said ends, said block having a comparatively broad clamping surface with diagonal ribs formed therein and said surface being concave.

4. A rope clamp comprising a U-shaped bolt, a block slidable on the arms thereof, clamping nuts for the arms of said bolt, the curved middle portion of said bolt having
70 a surface of greater width than the normal diameter of the bolt, said surface being formed by the pressure of a die thereon, the rope or cable to be clamped being held between said surface and said block.

5. A rope clamp comprising a U-shaped
75 bolt, a block slidable on the arms thereof, clamping nuts for the arms of said bolt, the curved middle portion of said bolt having a surface of greater width than the normal diameter of the bolt, and said block having
80 a surface cooperating with the surface on said bolt to grip the rope or cable between them.

In witness whereof, I have hereunto set my hand this 22nd day of May 1919.

OLIVER CROSBY.

Witnesses:

O. W. MORTON,
E. M. BOEGE.