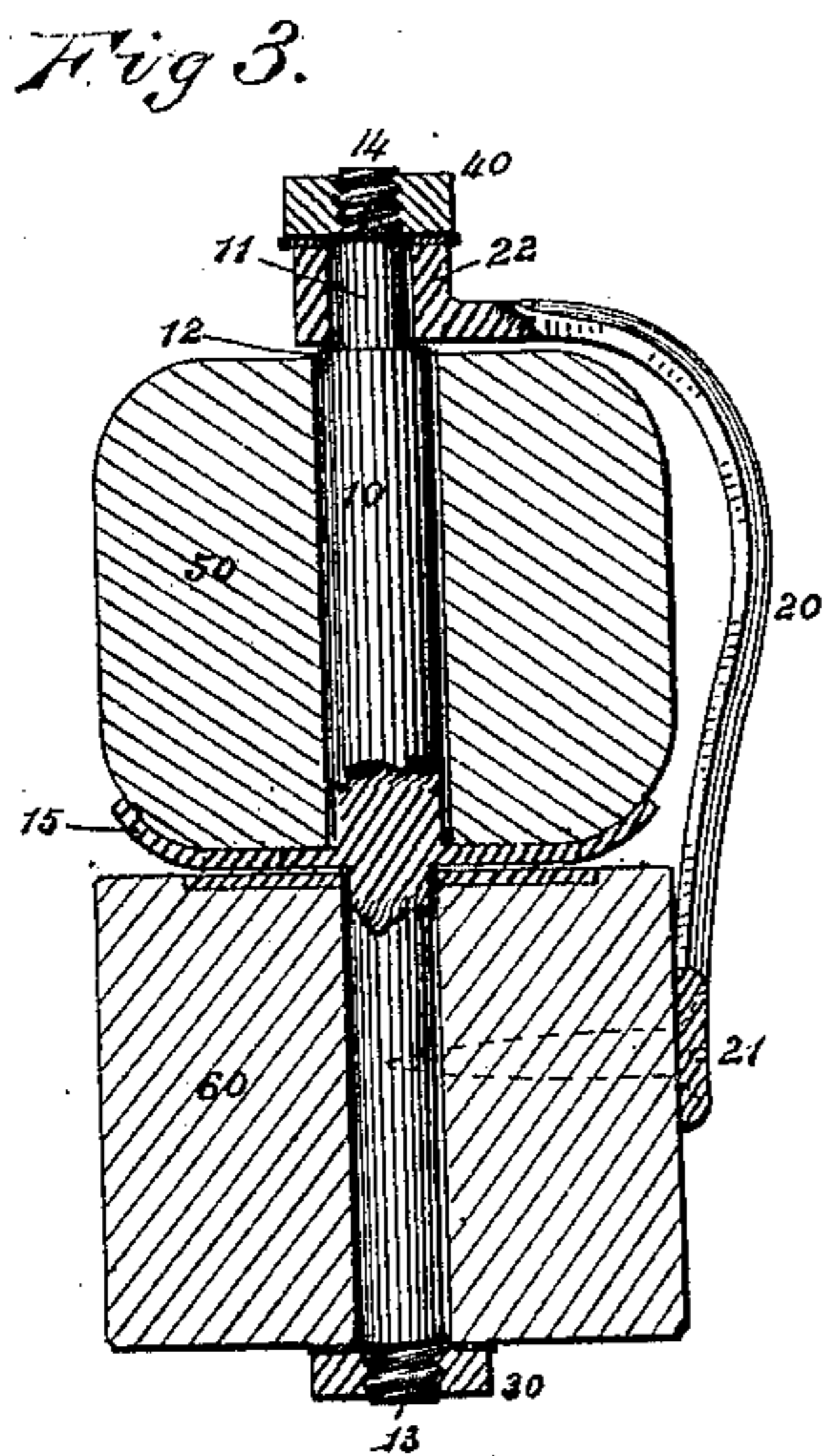
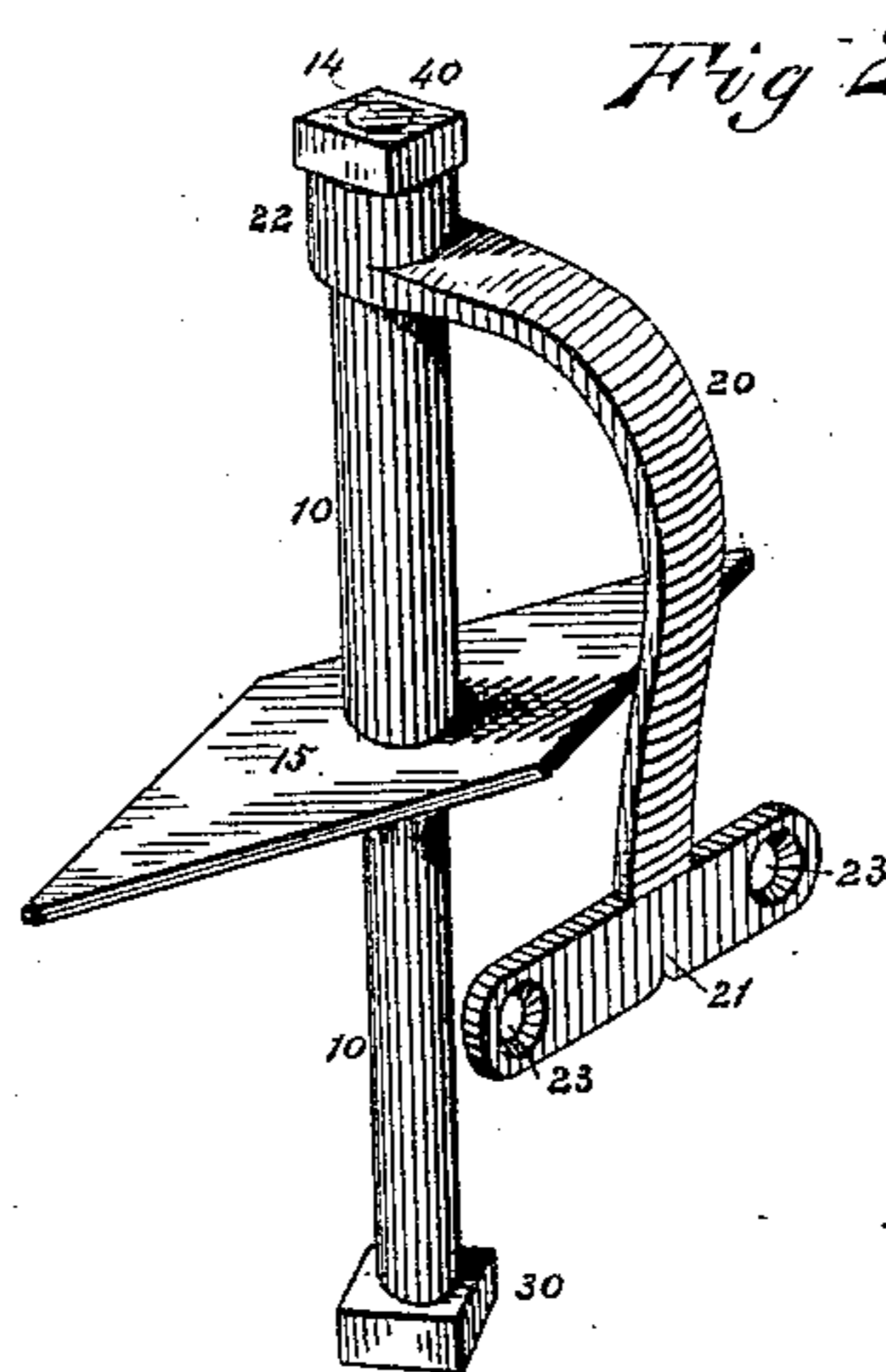
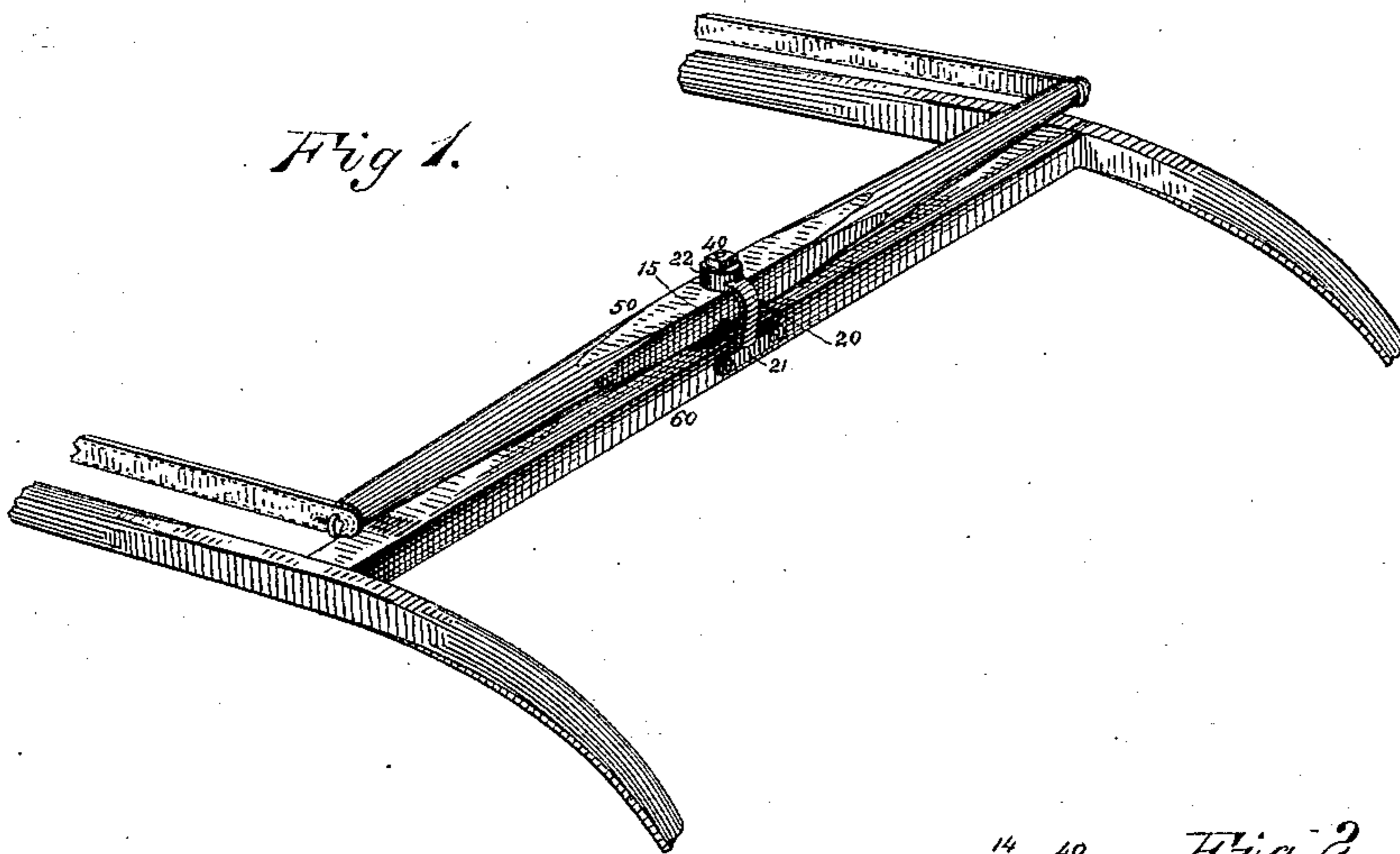


(No Model.)

M. B. RUNYAN.  
WHIFFLETREE COUPLING.

No. 429,702.

Patented June 10, 1890.



WITNESSES

*Harry King*  
*G. A. Reed*

INVENTOR:

*Milo B. Runyan*  
*By J. C. Jones*  
Attorney

# UNITED STATES PATENT OFFICE.

MILO BAXTER RUNYAN, OF GREAT FALLS, ASSIGNOR TO HIMSELF, AND  
EDWARD J. MORISON, OF PHILBROOK, MONTANA.

## WHIFFLETREE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 429,702, dated June 10, 1890.

Application filed October 10, 1889. Serial No. 326,616. (No model.)

*To all whom it may concern:*

Be it known that I, MILO BAXTER RUNYAN, a citizen of the United States, residing at Great Falls, in the county of Cascade and Territory of Montana, have invented certain new and useful Improvements in Whiffletree-Couplings, of which the following is a specification.

This invention relates to a whiffletree-coupling for connecting either a singletree, a doubletree, or a trebletree to a vehicle-pole or to the cross-bar of the thills, or for connecting a singletree to a doubletree or trebletree.

The object of the invention is to provide a safety whiffletree-coupling which will be strong and durable and which will hold the parts firmly and securely.

Figure 1 of the accompanying drawings is a perspective view of a portion of a pair of thills and a singletree connected to the cross-bar thereof by means of this improved whiffletree-coupling. Fig. 2 is a perspective view of this improved whiffletree-coupling detached. Fig. 3 is a vertical transverse section through a whiffletree and cross-bar connected by this improved whiffletree-coupling.

Similar numerals of reference indicate corresponding parts in the different figures.

This improved whiffletree-coupling comprises a bolt 10, a plate 15, fixed centrally on said bolt, a curved brace 20, and nuts 30 and 40 at opposite ends of said bolt. The bolt 10 extends through whiffletree 50 and through the cross-bar, doubletree, or singletree 60. This bolt is preferably of smaller diameter in the part below the plate 15, which passes through the cross-bar, than in its upper part above said plate, which passes through the whiffletree. The bolt is provided above the whiffletree with a reduced extension 11, a shoulder 12 being formed at the junction of the extension with the body of the bolt on a plane at or above the top of the whiffletree. The lower end of the bolt 10 is provided with a screw-thread 13 and the upper end of the extension 11 is provided with a screw-thread 14, said screw-thread being adapted for receiving the nuts 30 and 40. The curved brace 20 is provided with an attaching-plate 21 at its lower end and with an eye 22 at its upper end, said eye being adapted

to fit over the reduced extension 11 of the bolt 10. The attaching-plate or T-shaped end of the brace is provided with screw-holes 23 for attachment of the brace to the cross-bar 60.

In the use of this improved whiffletree-coupling the whiffletree is passed over the upper portion of the bolt 10 into contact with the plate 15, which is bent up and made to embrace the whiffletree on opposite sides thereof. The lower portion of the bolt is then passed through the cross bar and the nut 30 applied to the lower end of said bolt. The eye 22 of the brace 20 is then passed over the reduced extension 11 of the bolt 10 and the T-shaped end 21 of said brace secured by screws to the cross-bar. The nut 40 is then placed on the threaded portion of said extension over said eye. The curved plate 15 causes the bolt to turn with the whiffletree as the latter oscillates. The brace 20 prevents the bolt from canting forward, and in connection with the plate 15 renders the coupling absolutely secure, as the bolt cannot escape if both nuts be lost. The shoulder 12 constitutes a stop against the eye of said brace to prevent the upward movement of the bolt, and the plate 15 acts as a stop against the cross-bar to prevent the downward movement of the bolt.

I claim—

1. A bolt for a whiffletree-coupling provided with a fixed plate adapted to intervene between the whiffletree and its supporting-bar and with a reduced extension at one end, a shoulder being formed at the junction of said extension with the body of the bolt.

2. A whiffletree-coupling comprising a whiffletree-bolt provided with a fixed plate adapted to intervene between the whiffletree and its supporting-bar and with a reduced extension at one end, a shoulder being formed at the junction of said extension with the body of the bolt, and a curved brace provided at one end with an attaching-plate and at the other end with an eye for receiving the extension of said bolt and engaging the shoulder thereof.

3. A whiffletree-coupling comprising a bolt of a length to extend through the whiffletree and its supporting-bar, said bolt being pro-

vided with a fixed plate adapted to intervene between the whiffletree and its supporting-bar, with a reduced extension at one end, with a shoulder at the junction of said extension  
5 with the body of the bolt, and with screw-threads at its extremities, a curved brace provided with an eye at one end for receiving said extension and engaging said shoulder, and with an attaching-plate at its opposite  
10 end, and nuts for said screw-threaded extremities.

4. The combination of a whiffletree, a supporting-bar therefor, a pivot-bolt for said tree and bar provided with a curved plate fixed  
15 on said bolt between said tree and bar and with a reduced extension at one end, a shoulder being formed at the junction of said extension with the body of the bolt, and a curved brace attached to said bar and provided with  
20 an eye for receiving said extension and engaging said shoulder.

5. The combination of a whiffletree, a supporting-bar therefor, a pivot-bolt for said tree and bar provided with a curved plate fixed  
25 on said bolt between said tree and bar, the ends of said curved plate being curved up-

ward to embrace said whiffletree and with a reduced extension at one end, a shoulder being formed at the junction of said extension with the body of the bolt, and a curved brace  
30 attached to said bar and provided with an eye for receiving said extension and engaging said shoulder.

6. The combination of a whiffletree, a supporting-bar therefor, a pivot-bolt passing  
35 through said bar and tree provided with a curved plate fixed on said bolt between said bar and tree, with a reduced extension at one end of said bolt beyond the whiffletree, with a shoulder at the junction of said extension  
40 with the body of the bolt, and with screw-threads at the extremities of said bolt, a curved brace attached at one end to said supporting-bar and provided at the other end with an  
45 eye for receiving said extension and engaging said shoulder, and nuts at the extremities of said bolt.

MILO BAXTER RUNYAN.

Witnesses:

C. E. FORD, Jr.,

E. W. JOHNSON.