No. 859,870. PATENTED JULY 9, 1907.

W. BUTLER.

WHIFFLETREE.

APPLICATION FILED APR. 5, 1906.

Fig. 1.

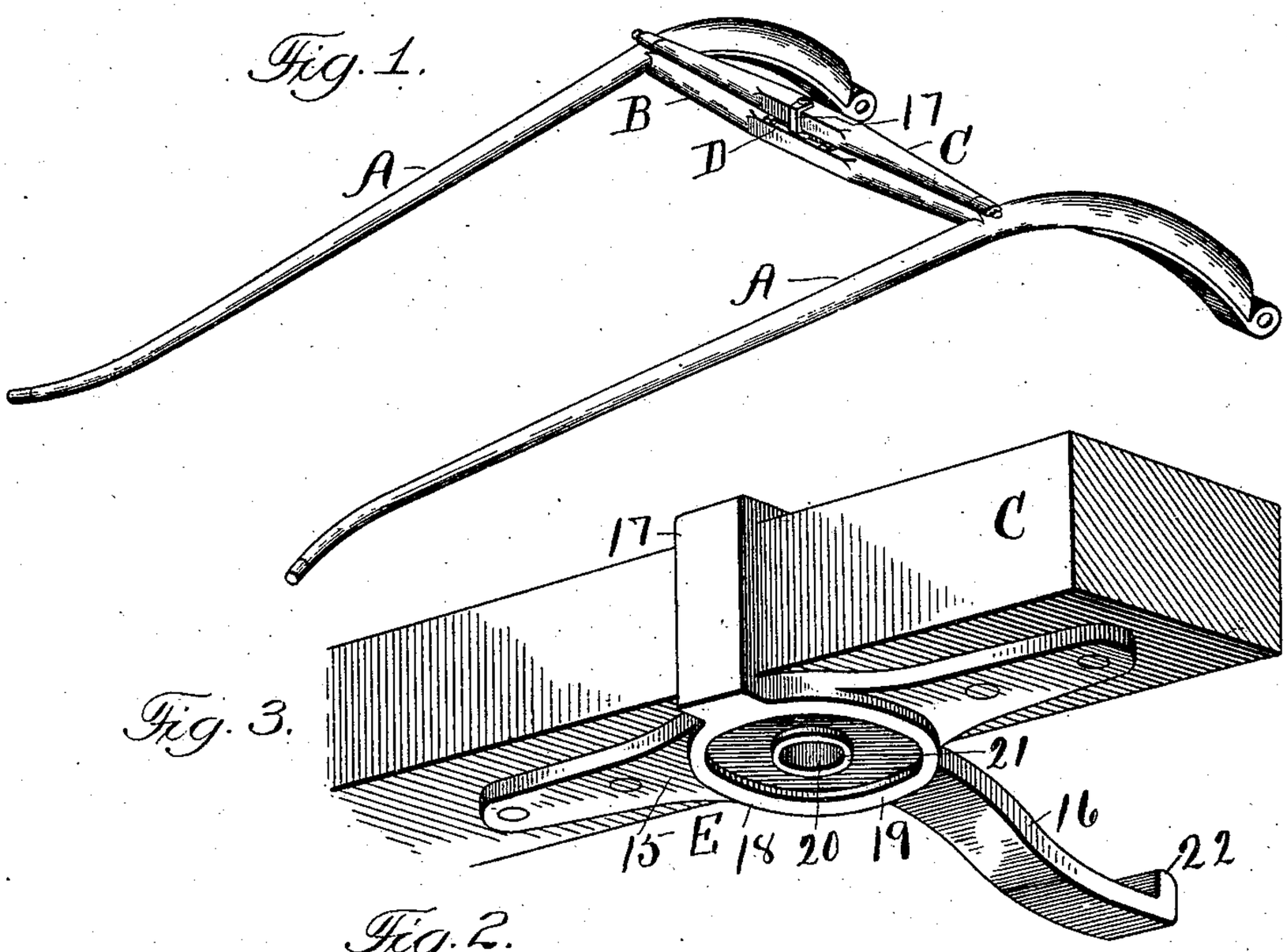
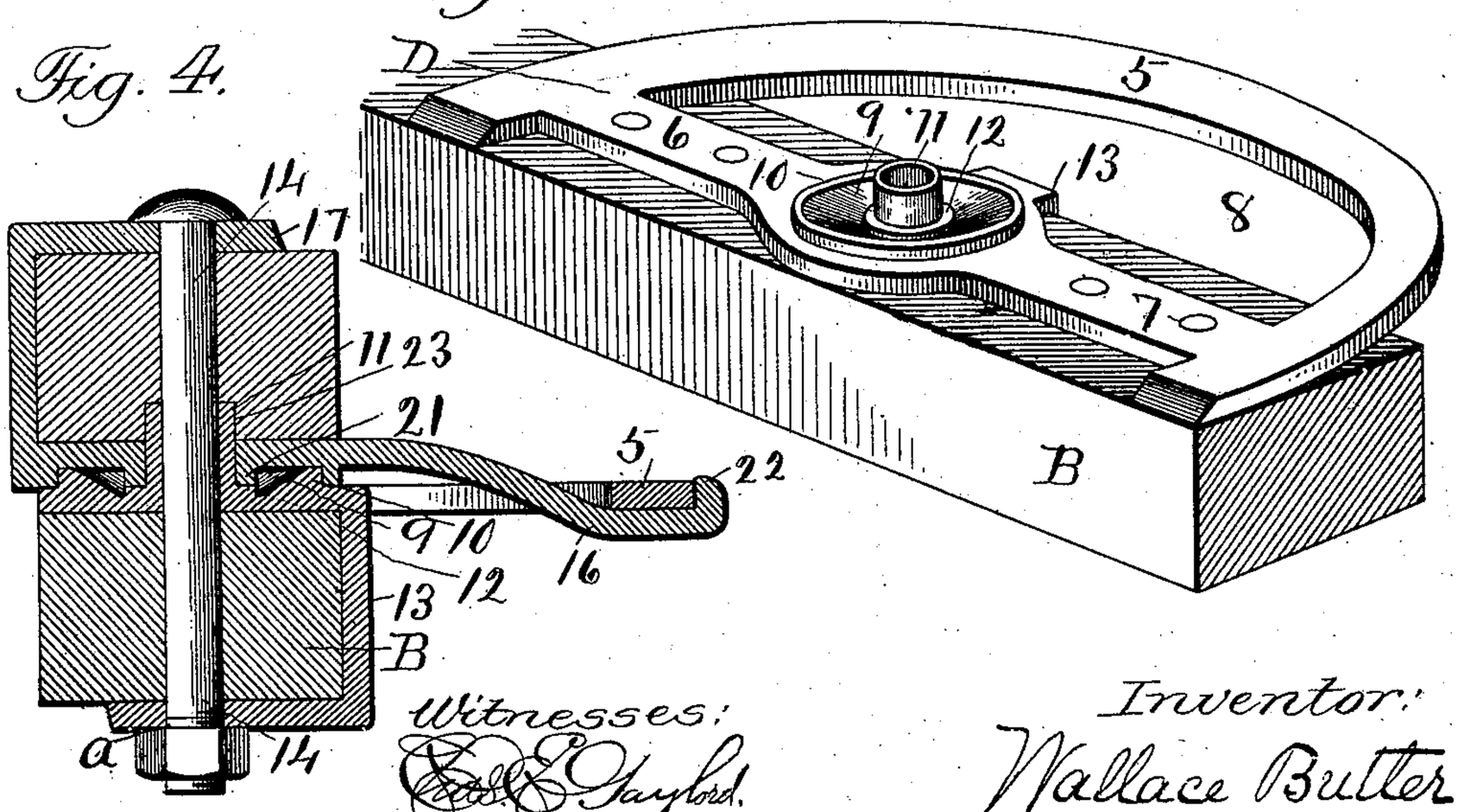


Fig. 3.

Fig. 2.

Fig. 4.



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UNITED STATES PATENT OFFICE.

WALLACE BUTLER, OF DAVIS JUNCTION, ILLINOIS, ASSIGNOR OF ONE-HALF TO WILLIAM C. DOYLE, OF SYCAMORE, ILLINOIS.

WHIFFLETREE.

No. 859,870. Specification of Letters Patent. Patented July 9, 1907.

Application filed April 5, 1906. Serial No. 310,191.

To all whom it may concern:

Be it known that WALLACE BUTLER, a citizen of the United States, residing at Davis Junction, in the county of Ogle, and State of Illinois, have invented new and useful Improvements in a Whiffletree, of which the following is a specification.

This invention relates to improvements in whiffletrees, and has for its object to provide an attachment that will insure a free and easy movement in the pivotal bearings or connections in devices of this character.

In the drawing, Figure 1 is a view in perspective, showing the improvement in its working position. Fig, 2 is a view in perspective of a part of a cross-bar showing one part of the improved attachment. Fig. 3 is a view in perspective of a whiffletree showing the other joining part of the attachment; and Fig. 4 is a vertical transverse section of the two parts shown in Figs. 2 and 3 when assembled in their working position.

This improved attachment is adapted to be used in connection with swingle, double and trebletrees; the term whiffle will however be more generally used in describing the same. The practical illustration of the attachment, as shown in Fig. 1, is for a single hitch.

A may represent a pair of thills connected by a rigid cross-bar B to which the whiffletree C is attached as shown in Figs. 1 and 4.

A pivotal bearing member D consists of a radius or semicircular bar 5 connected near its respective ends by a cross-plate 6 forming an integral part thereof, the radius-bar and cross-plate preferably lying in substantially the same horizontal plane. This member D, is in this instance rigidly secured to the upper side of the cross-bar B, connecting the thills A, by means of pins or screws 7 inserted through said plate, as best shown in Fig. 2. A space 8 is left between the cross-bar B and the radius-bar 5, the purpose of which will be hereinafter set forth.

The plate 6 of the member D is provided near its longitudinal center with an annular recess 9 surrounded by a raised rim-edge 10. A bearing sleeve 11 rises upward from the recess 9 and is surrounded by a shoulder 12 at the base, as shown in Figs. 2 and 4. A clip 13 extends downward from plate 6, passing underneath the cross-bar B and is perforated as at *a* for the passage therethrough of a pivot-bolt or pin 14.

The upper engaging bearing member E comprises a plate 15, a radius arm 16 and a clip 17. The plate 15 is rigidly secured to the underside of the whiffletree C and provided centrally with an annular recess 18 bordered by a rim-edge 19, as shown in Fig. 3. This plate is provided with a hole 20 for the reception of the sleeve 11 of the member D when it is inserted to join the two members or parts together in their engaged working position. A turned down flange-edge 21 surrounds the bolt hole 20, as shown in Figs. 3 and 4.

The radius-arm 16 forms an integral part of the member E and extends backward therefrom, being bent downward to pass under the radius-bar 5 and has its free end bent upward to form a hook 22 which loosely engages the outer edge of the radius-bar, as shown in Fig. 4. As the whiffletree swings on its pivot in practical working, the arm 16 has a free movement in the space 8, the hook end 22 having a continuous bearing on and following the curvature of the engaged edge of the radius-bar and conforming to the position of the swinging whiffletree. The radius arm attachment not only serves to assist in retaining all the parts in the proper relative position but also holds the members in their true working position so that the wear on the bearing surfaces is uniform, thereby providing for a free movement so that the friction is reduced to a minimum and especially so when used on double or trebletrees. This form of construction also greatly increases the durability of the working parts.

The underside of the whiffletree is provided with a recess 23 into which the sleeve 11, formed on the member D, fits when the two members are assembled. The clip 17 extends upward and back over the top of the whiffletree and is perforated for the insertion of the pivot-bolt 14.

When the two members are assembled in their working position, the rim edge 19 of the member E fits down around the rim edge 10 of the member D and comes to a rest on the surface thereof. At the same time the flange edge 21 comes to a bearing on the shoulder 12 at the base of the sleeve 11. This provides for a close union of the two members in excluding dust and dirt and at the same time allows for a free and easy movement. A suitable lubricant may be placed in the recess 9 in lubricating the wearing surfaces.

The fact that the shoulder 12 is elevated above the bottom of the recess constitutes the latter as a sort of trap for the collection of such particles of grit as may obtain entrance, such particles settling through the oil to a level below the bearing faces, whereby the latter are saved from abrasion.

The passage of the pivot bolt 14 vertically through both clips 13 and 17 as well as through the plates 6 and 15, affords a simple and effective means of retaining the parts securely in proper relation. While the pins or screws 7 are employed, they are merely for the purpose of holding the bearing members against rotation on their supports and to prevent undue looseness, and consequently may be quite small so as not to weaken the cross-bar B and the whiffletree.

It will be understood that when used as an evener in combining swingle, double and trebletrees, a whiffletree or similar bar would be substituted for the cross-bar B used in connection with the pair of thills shown in the drawing.

Having thus described my invention, what I claim is—

In a device of the kind described, a bearing member consisting of a radius-bar and a connecting cross-plate provided with a recess inclosed by a rim-edge and having a sleeve extending upward from said recess and surrounded at its base by a shoulder elevated above the bottom of the recess, and a companion bearing member consisting of an attaching-plate provided with a recess bordered by a rim-edge adapted to surround the rim-edge of the first member when assembled in a working position and having a bolt hole centrally of said recess surrounded by a depending flange edge adapted to inclose said sleeve and to rest upon the top of said shoulder.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WALLACE BUTLER.

Witnesses:
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