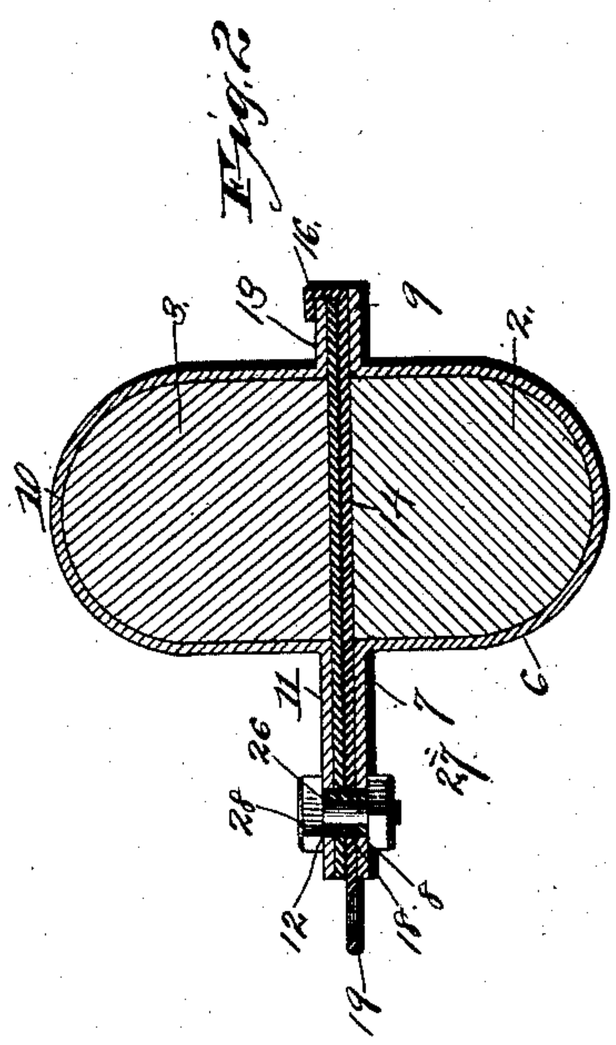
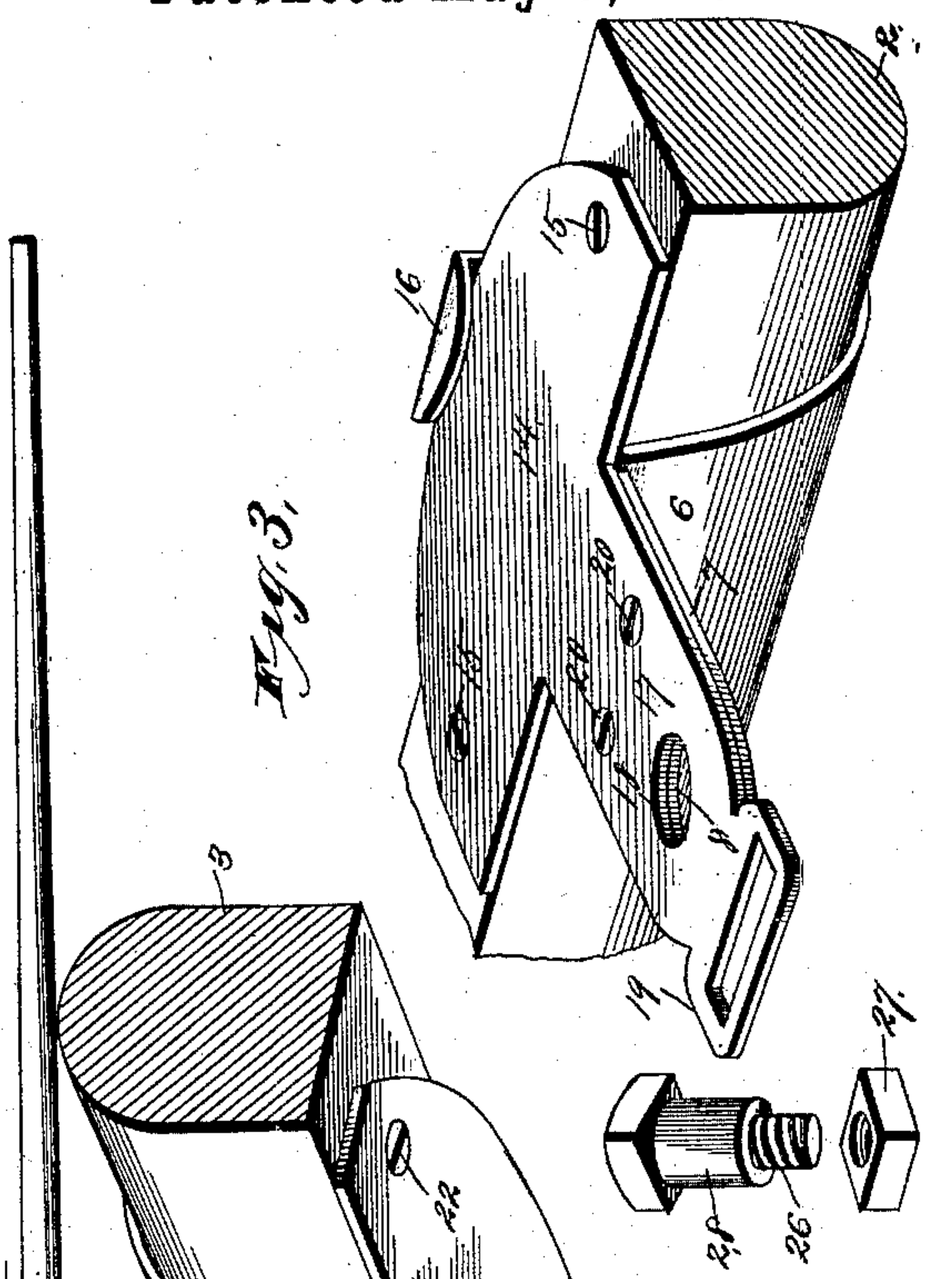
(No Model.)

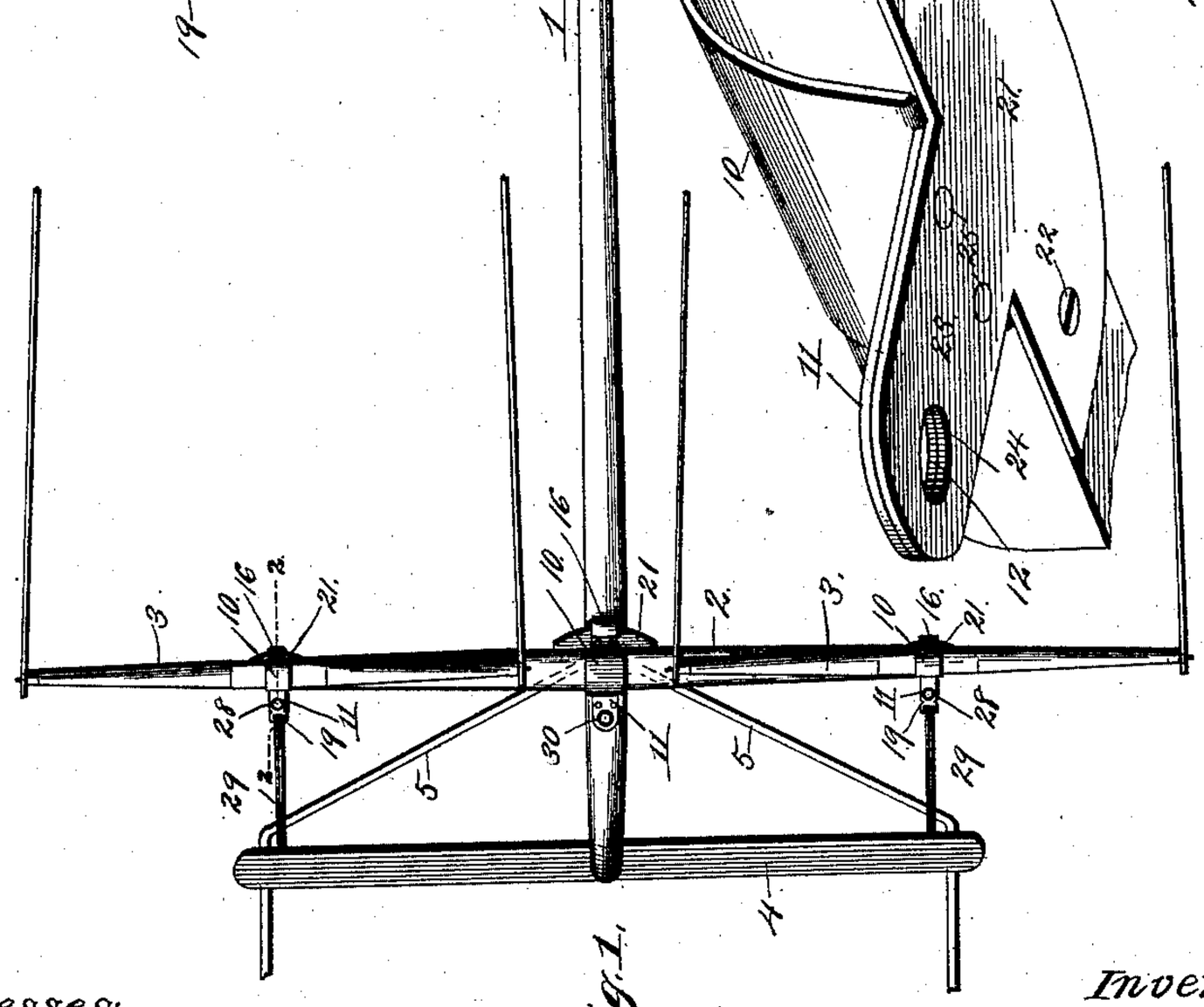
J. A. MILLIAN.

WHIFFLETREE ATTACHMENT.

No. 474,026. Patented May 3, 1892.







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UNITED STATES PATENT OFFICE.

JOHN A. MILLIAN, OF DEXTER, KANSAS.

WHIFFLETREE ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 474,026, dated May 3, 1892.

Application filed September 28, 1891. Serial No. 407,025. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. MILLIAN, of Dexter, Cowley county, Kansas, have invented certain new and useful Improvements in Whiffletree Attachments, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

Previous to my present invention singletrees have been usually so connected to doubletrees that the singletrees are located in advance of the doubletrees, and this construction has always been defective because it permits vertical vibrations of the singletrees, rendering them liable to strike the hind legs of the draft-animals and injure and frighten them, besides imparting an unsightly appearance to the vehicle and harness. Singletrees have also to some extent previous to my present invention been so connected to doubletrees as to extend directly above or below the doubletrees, thus avoiding the vertical vibrations of the singletrees; but such arrangements have heretofore been defective on account, first, of lack of free horizontal vibration to accord with the "horse motion," and, secondly, on account of the excessive wear due to the direct contact of the singletrees with the doubletrees. As will be seen from the ensuing description, I have produced attachments for the superimposed type of singletrees and doubletrees which permit as much freedom of horizontal vibration of the singletrees as is allowed in the type in which the singletrees are placed in advance of the doubletrees and which at the same time prevent the excessive wear of the usual superimposed type of singletrees and doubletrees and which, furthermore, entirely avoid all possibility of accidental disconnection of the doubletrees and singletrees, of such frequent occurrence in the previous types referred to.

My invention relates to appliances for connecting singletrees to doubletrees, doubletrees to tongues or poles of vehicles, and for connecting various forms of whiffletrees to each other or to the tongues or cross-bars of vehicles.

The objects of my invention are to produce a simple, durable, and inexpensive form or attachment which shall be capable of use in a great variety of situations, which shall prevent all wear of the whiffletrees by direct contact with each other, and which shall avoid all possibility of accidental disconnection of the whiffletrees, while permitting the utmost desirable freedom of relative movement of the same.

To the above purposes my invention consists in certain peculiar and novel features of construction and arrangement, as hereinafter described and claimed.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a plan view of a vehicle pole or tongue and its double and single trees with my improvements applied thereto. Fig. 2 is a transverse vertical section of the same on the line 2 2 of Fig. 1. Fig. 3 comprises detached views of the principal parts of my improved attachments.

In the said drawings, let 1 designate the pole or tongue of a wagon, carriage, or other vehicle; 2, the doubletree, and 3 the singletrees, of the same. It is to be understood that these parts are of the usual or any suitable or preferred type, my improved attachments being designed for use in connection with whiffletrees of all kinds, as will be hereinafter fully explained. In Fig. 1 the tongue 1 is also shown as connected by the usual oblique bars 5 to the usual cross-bar 4 of a vehicle, these parts being shown simply to more clearly define the relative locations of the attachments, and said parts being also of any suitable or preferred type.

I will first describe the form of the attachments by which the singletrees are attached to the doubletree, referring more particularly to Figs. 2 and 3.

6 designates a U-shaped clip, which embraces the under side of the doubletree and which is formed or provided at its upper rear margin with a horizontal rearwardly-projecting extension 7, the outer or rear extremity of said extension being formed with a hole or eye 8. The opposite or front margin of this clip 6 is formed with a short horizontal forwardly-projecting extension 9, said extensions 7 and 9 being flush at their upper sides with the upper side of the doubletree.

10 designates an inverted-U-shaped clip,

which embraces the upper side of the singletree and which at its rear margin is formed or provided with a horizontal rearwardly-projecting extension 11, which preferably corresponds in form with the extension 7, before described, and which is also formed with a hole or eye 12, said eyes 8 and 12 registering with each other. At its opposite or front margin the clip 10 is formed with a short horizontal forwardly-projecting extension 13, which corresponds in form with the extension 9, above described. Upon the upper side of the doubletree is mounted a bearing-plate 14, the rear margin of which is of straight form and lies flush with the rear upper edge of the doubletree. The front margin of this bearing-plate is of substantially semicircular form, and the total width of said plate is such that this semicircular margin of the bearing-plate projects horizontally beyond the front side of the doubletree. The bearing-plate 14 is secured to the upper side of the doubletree by any suitable number of screws 15 or bolts, if preferred, and at the middle of its front margin the said bearing-plate is formed with an upwardly-projecting extension 16, the said extension being of inverted-L form in cross-section, and its upper portion extending rearward horizontally. At its rear side the bearing-plate 14 is formed with a horizontal rearwardly-projecting extension 17, corresponding in form with the extensions 7 and 11, before described. The rear extremity of this extension 17 is formed with a horizontal transverse loop or eye 19 for a purpose to be presently explained, and said extension 17 is secured to the extension 7 by any suitable number of screws, rivets, or bolts 20. Upon the under side of the singletree is mounted a second bearing-plate 21, which corresponds in general form and dimensions with the bearing-plate 14, just described, the rear margin of the bearing-plate 21 being of straight form and lying flush with the rear lower margin of the singletree and the front margin of said bearing-plate being of substantially semicircular form and projecting forwardly beyond the front side of the singletree and with its front margin in alignment with the front margin of the bearing-plate 14. This bearing-plate 21 does not have any projection, however, but is left perfectly plain, and the said bearing-plate is secured to the under side of the singletree by any suitable number of screws or bolts 22, similar to those employed for securing the bearing-plate 14 to its doubletree. From the middle of the rear margin of the bearing-plate 21 projects a horizontal rearward extension 23, corresponding in form with the extensions 7 11 17, before described, and provided, also, with a hole or eye 24, the said extension 23 being secured to the extension 11 by any suitable number of screws, rivets, or bolts 25, corresponding to the described devices by which the extension 17 is secured to the extension 7. Through the holes or eyes 8, 12, 18, and 24, above described, is passed a bolt 26, upon the lower end of which is screwed a nut 27, which retains the bolt in position, a cylindrical enlargement 28, which extends downward from the head of the bolt toward its opposite or threaded end, extending through said eyes. This bolt serves as a means for connecting the singletree and its attachments to the doubletree and its attachments, while the loop or eyes 19 serve as the means for connecting the doubletree to the axle by means of the usual straps 29.

The attachments for connecting the doubletree to the tongue are essentially the same as those described for connecting the singletrees to the doubletree, and in Fig. 1 corresponding parts are designated by similar figures of reference. In this instance, however, the loop or eye 19 being unnecessary is preferably omitted from the bearing-plate 17, and the bolt 30, which corresponds to the bolt 26, differs from said bolt only in length, the length of the bolt 30 being sufficient to enable said bolt to pass entirely through the tongue and the nut 27 being screwed upon the lower end of said bolt in order to retain the latter in position.

From the above description it will be seen that I have produced a simple and durable, as well as inexpensive, form of device for connecting singletrees to doubletrees, doubletrees to tongues, and for various other analogous purposes—such, for example, as connecting the whiffletrees of eveners or equalizers. It will be seen, furthermore, that the upper and lower bearing-plates prevent direct contact of the whiffletrees, and consequently all wear of the material of the whiffletrees due to the relative vibrations of the same, and that the described relation of the parts is such as to permit all desirable freedom of movements of the whiffletrees; and, still further, it will be seen that the projections 16 serve to prevent any possibility of accidental disconnection of the parts, relieving the bolts 28 or 30 from excessive strains, and properly controlling the movements of the whiffletrees.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. An appliance for connecting superimposed whiffletrees, &c., comprising an upper bearing-plate arranged to extend across the under side of the upper whiffletrees, a lower bearing-plate arranged to extend across the upper side of the lower whiffletree and in contact at its upper side with the under side of the upper bearing-plate, a rearward extension of the upper bearing, a similar rearward extension of the lower bearing-plate, a pivot connecting-bolt passing through said extensions back of the single and double trees, and an angular extension of the front of one bearing-plate embracing the front marginal portion of the companion bearing-plate, substantially as set forth.

2. An appliance for superimposed whiffletrees, &c., comprising a U-shaped clip for

embracing the upper side of a singletree and provided with a rearward extension of its lower margin, a second U-shaped clip to embrace the under side of the doubletree and having a similar rearward extension of its upper margin, a bearing-plate to extend across the under side of the singletree and provided with a rearward extension, a second bearing-plate to extend across the upper side of the doubletree and having its upper surface in contact with the lower surface of the upper bearing-plate and also provided with a similar rearward extension, a connecting pivot-bolt extending through the extensions of the clips and bearing-plates and located back of the single and double trees, and an angular extension of the front margin of one bearing-plate embracing the corresponding front margin of the companion bearing-plate, substantially as set forth.

3. An improved appliance for connecting superimposed whiffletrees, &c., comprising a pair of U-shaped clips for embracing the whiffletrees, each having a rearward extension, a pair of bearing-plates, each arranged to extend across the adjacent sides of the whiffletrees and having also a rearward extension interposed between the extensions of the clips and having, furthermore, forwardly-extending curved front margins, an upward angular extension of one of said margins overlying the corresponding margin of the companion bearing-plate, and a pivot-bolt passing through the said rear extensions, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN A. MILLIAN.

Witnesses:
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