No. 694,545. Patented Mar. 4, 1902.

J. HAFER, Sr.

SINGLETREE ATTACHMENT.

(Application filed Oct. 16, 1901.)

(No Model.)

Fig. 1.

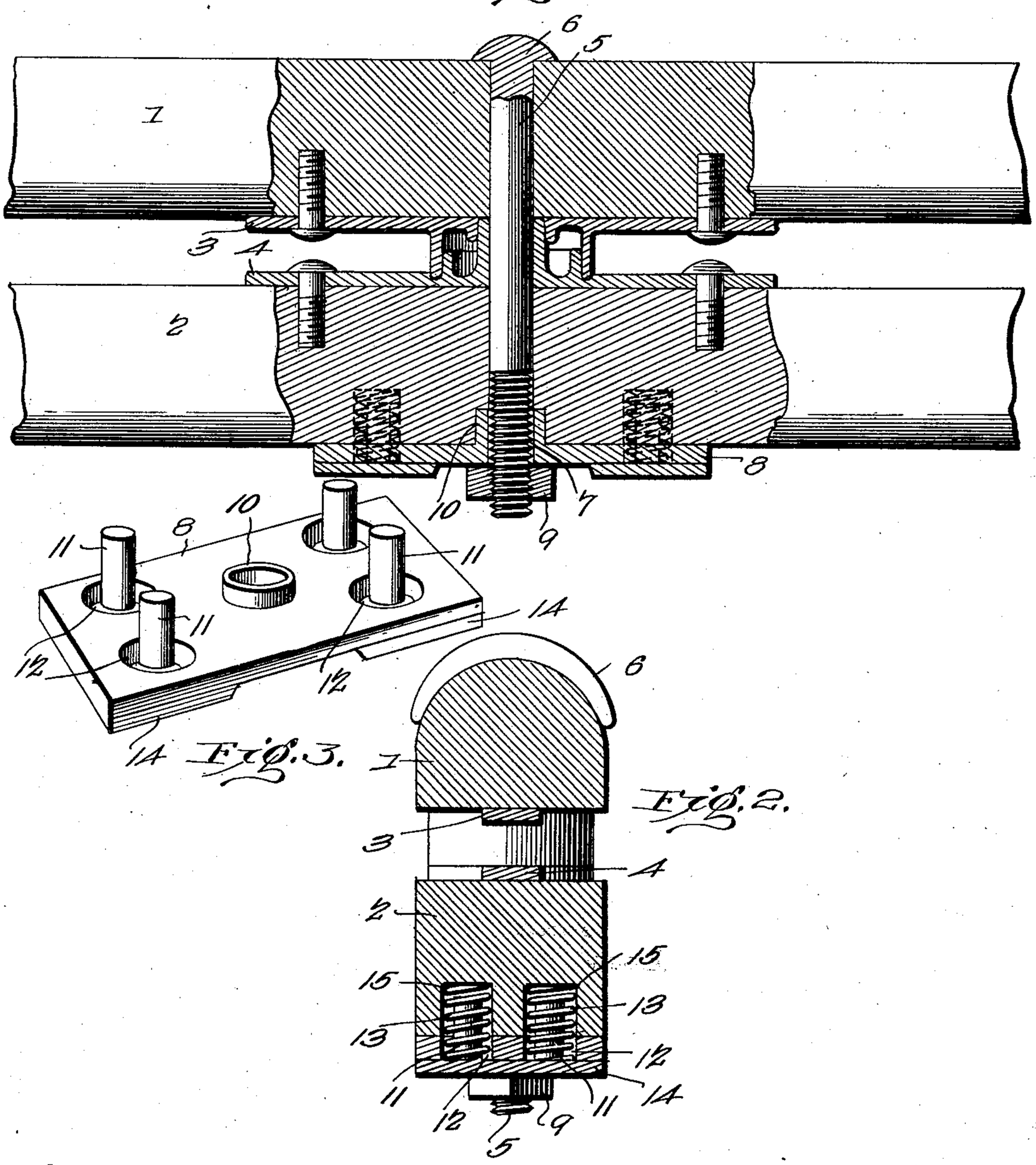

Fig. 3.

Fig. 2.

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UNITED STATES PATENT OFFICE.

JAMES HAFER, SR., OF AUGUSTA, KENTUCKY.

SINGLETREE ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 694,545, dated March 4, 1902.

Application filed October 16, 1901. Serial No. 78,845. (No model.)

To all whom it may concern:

Be it known that I, JAMES HAFER, Sr., a citizen of the United States, residing at Augusta, in the county of Bracken and State of Kentucky, have invented a new and useful Singletree Attachment, (Case B,) of which the following is a specification.

This invention relates to singletree attachments.

The object is to provide a simply-constructed and thoroughly-efficient form of antirattling singletree attachment which may be readily applied to position without necessitating any change in the structural arrangement of the singletree or of the cross-bar of the shafts other than what can be readily accomplished by an ordinary wheelwright and which in use will be thoroughly effective in preventing any rattling, even though the nut holding the assembling-bolt of the singletree and the cross-bar works loose.

With these and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a singletree attachment, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like numerals indicate corresponding parts, there is illustrated a form of embodiment of this invention capable of carrying the same into practical operation, it being understood that the elements therein exhibited may be varied or changed as to shape, proportion, and exact manner of assemblage without departing from the scope of the invention, and in these drawings—

Figure 1 is a view in sectional elevation showing the attachment applied to the singletree and the cross-bar of a pair of shafts. Fig. 2 is a view in transverse section. Fig. 3 is a detached detail perspective view of the supporting-plate for the antirattling springs.

Referring to the drawings, 1 designates an ordinary singletree, 2 a shaft cross-bar, and 3 and 4 wear-plates carried, respectively, by the under side of the singletree and the upper side of the cross-bar and operating in the usual manner to hold these parts spaced at the proper distance apart. As the elements above enumerated may be of the usual or any preferred construction, further description is deemed unnecessary.

Passing through the singletree and the cross-bar is a bolt 5, having a curved head 6 to embrace the singletree, as usual, the lower end of the bolt being projected below the cross-bar and passed through an orifice 7 of the antirattling spring-supporting plate 8, a nut 9 screwed on the projecting end of the bolt serving to clamp the plate against the under side of the cross-bar. The upper face of the plate is provided with a tubular extension 10, through which passes the orifice 7, the extension to be seated in a recess in the under side of the cross-bar and operating to hold the plate against lateral movement. Projecting upward from the plate are four studs or projections 11, these being disposed in pairs adjacent to each end of the plate, and surrounding each stud at the base thereof is a well or depression 12, to be engaged by the lower portions of coiled springs 13, mounted on the studs, the wells serving to prevent any lateral movement of the springs and also to house them securely against injury and from the deteriorating effect of the elements. As herein shown, the studs are carried by plates 14, suitably secured to the plate 8, as by being brazed or riveted thereto, and the wells are formed by boring openings in the plate 8; but it is to be understood that, if preferred, the structure exhibited in Fig. 3 may be cast or otherwise formed with all of the parts integral, and as this will be obvious and well understood detailed illustration is not thought to be necessary. The under side of the cross-bar is provided with four orifices 15, into which project the studs and the springs, the springs being of greater length than the studs in order to bear against the upper walls of the orifices, and thus exert a constant downward pressure on the plate, which latter by bearing upon the nut 9 will cause the singletree and cross-bar, or rather their wear-plates, to be kept in close contact, whereby rattling will be positively obviated. By reason of the pressure exerted by the springs 15 and by making these longer than the studs 11 rattling will be prevented even though the nut 9 work loose on the bolt to such an extent as to allow the plate 8 to drop some distance below the cross-bar; but it will be found in prac-

tice that the nut 8 will be prevented from working loose by the aforesaid pressure, by which it will be seen that the plate and its coacting springs constitutes, in effect, a nut-lock for the nut 9.

It will be seen from the foregoing description that to adapt this antirattler to the cross-bar of a buggy already in use it will only be necessary to enlarge the bolt-opening of the cross-bar for the reception 10 and provide orifices for the reception of the springs and studs.

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

1. The combination with a singletree and a cross-bar, or a bolt projecting through the parts, the cross-bar being provided on its under side with a plurality of orifices, a plate bearing springs to engage the orifices, and a nut on the bolt to hold the plate associated with the cross-bar.

2. The combination with a singletree and a cross-bar, of a bolt projecting through the parts, the under side of the cross-bar being provided with a recess surrounding the bolt and with a plurality of orifices, a plate bearing a plurality of studs having coiled springs mounted thereon, and a centrally-disposed tubular extension, the extension to engage the said recess and the studs and springs to engage the orifices, and a nut on the bolt for clamping the plate against the cross-bar.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JAMES HAFER, SR.

Witnesses:
FRANK CLENNY,
C. BARTLETT.