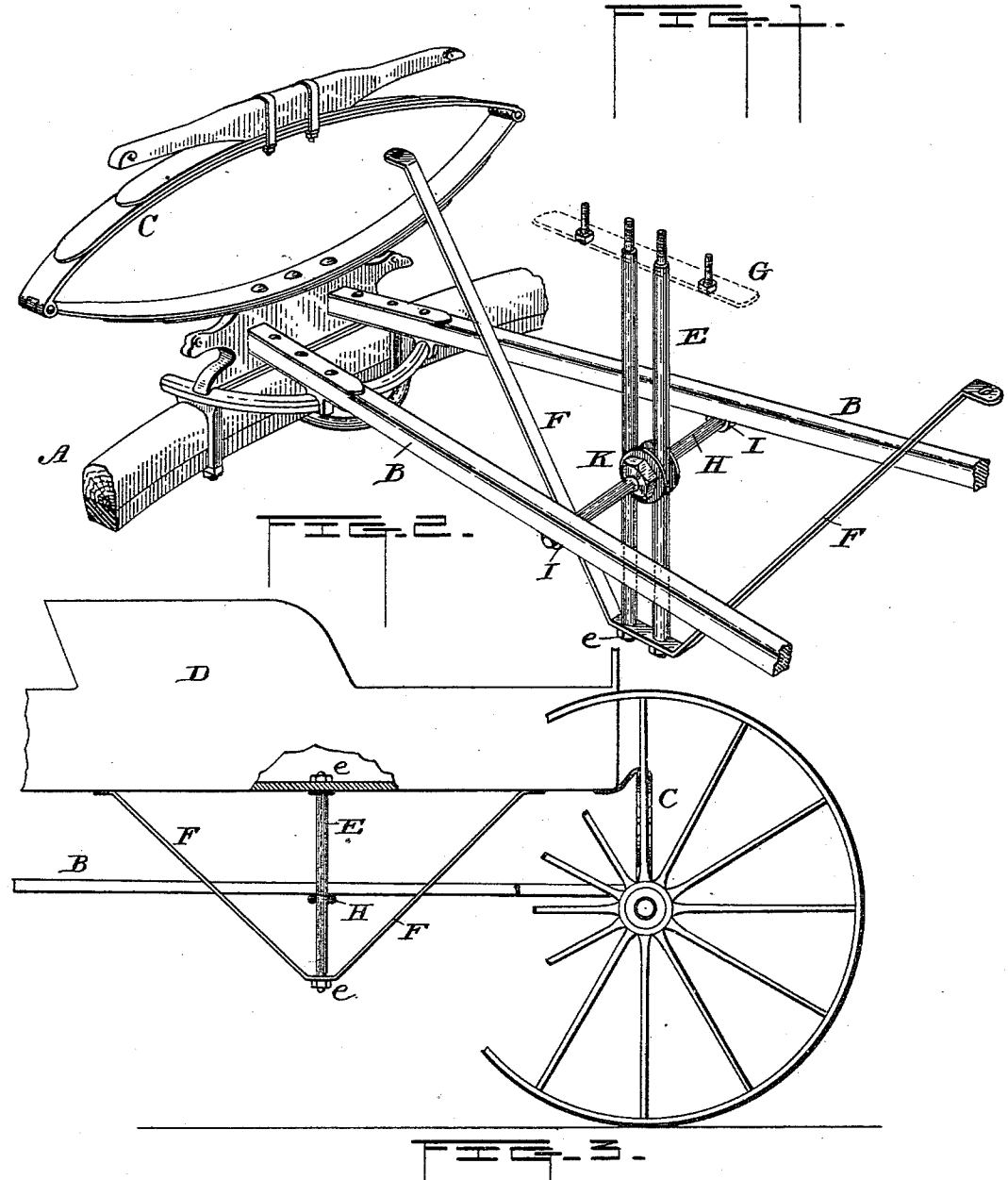
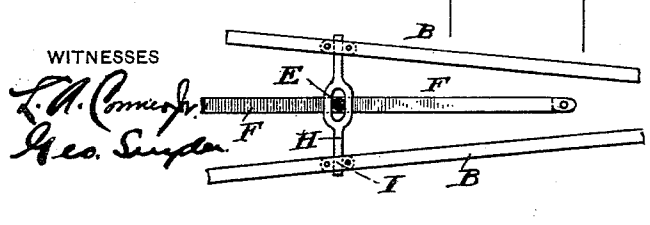
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BRACE FOR VEHICLE BODIES.

No. 458,395. Patented Aug. 25, 1891.





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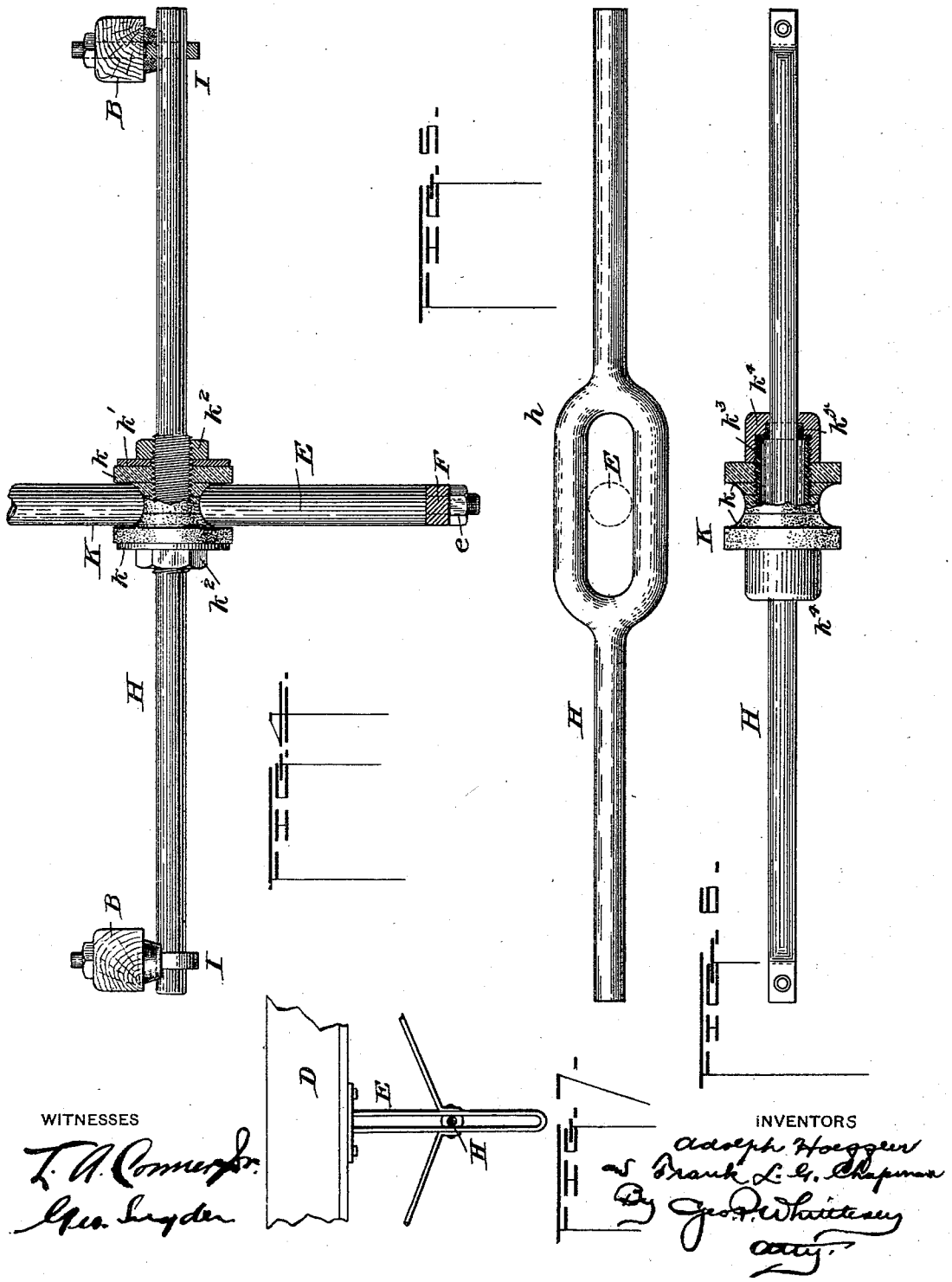
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UNITED STATES PATENT OFFICE.

ADOLPH HOEFFLER AND FRANK L. G. CHAPMAN, OF STEVENS POINT, WISCONSIN.

BRACE FOR VEHICLE-BODIES.

SPECIFICATION forming part of Letters Patent No. 458,395, dated August 25, 1891.

Application May filed 13, 1891. Serial No. 392,604. (No model.)

To all whom it may concern:

Be it known that we, ADOLPH HOEFFLER and FRANK L. G. CHAPMAN, citizens of the United States, residing at Stevens Point, in the county of Portage and State of Wisconsin, have invented certain new and useful Improvements in Braces for Bodies of Vehicles; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Our invention relates to vehicles provided with end springs; and its object is to relieve the springs of the racking strains thrown upon them by the endwise movements of the body due to the inertia of the load. These strains loosen the clips and joints of the springs and are otherwise objectionable.

Our invention prevents all endwise motion of the body and springs and greatly stiffens the body.

In the drawings, Figure 1 is a perspective view of the front axle and spring and the double reach of a buggy provided with our brace. Fig. 2 is a partial side elevation showing a modification. Fig. 3 is a bottom plan view of the said modification. Fig. 4 is an enlarged elevation, partly in section, of the cross-bar shown in Fig. 1. Figs. 5 and 6 are modified cross-bars, and Fig. 7 is a further modification of the brace.

The axle A, double reach B, spring C, and body D may be of any desired construction.

To the under side of the body we fasten our brace, either directly to the bottom of the body or to a longitudinal cleat secured thereto. The brace is composed of a central vertical post E, the upper end of which is firmly secured to the body D, while its lower end is steadied by two inclined stays F, one extending forward and the other backward, and firmly secured to the body or to the cleat aforesaid. This structure constitutes a truss, which greatly stiffens the buggy-body. The central post may consist of two parallel members, as shown in Figs. 1 and 7, being in the former case two separate rods, each having at each end a shoulder and a threaded neck to receive a nut *e*, whereby it is fastened to the plate G and the stays F, and in the latter case a single rod bent into U shape, and having the stays welded or otherwise attached to it, preferably about midway of its length; or the post E may consist of a single rod, as shown in Figs. 2, 3, and 5, provided with suitable shoulders and threaded necks for fastening it to the buggy-body and the stays. It is evident that the post may have a double central portion and single upper and lower portions or be otherwise shaped to suit special requirements or tastes.

Secured to the reach is a guide H, adapted to engage with the post E. When the reach is double, as shown in Fig. 1, the guide assumes the form of a cross-bar, which passes between the two members of the double post. When the post is single, the cross-bar is formed with an eye *h*, preferably somewhat elongated and of a width to just permit the post to pass easily through it. The cross-bar may be fastened immovably to the double reach, as in Figs. 2, 3, 5, and 6, or it may be journaled in bearings I, secured to the reach, as in Figs. 1 and 4. The guide offers no obstacle to the free and easy movements, vertically, of the buggy-body; but it prevents all endwise motion thereof by reason of its engagement with the post E, any tendency of the post to move forward or backward with the body being resisted by the guide. The strains that would be otherwise brought to bear upon the springs and clips are thus taken up by the guide, which by its attachment to the reach is able to withstand them successfully.

In order to lessen the friction and wear between the double post and the cross-bar, we find it preferable to provide the bar with a roller or spool K, grooved on its periphery to retain it in place between the two members of the post. The wearing-surface of the spool may be made of metal, wood, hard rubber or the like; but we prefer to use layers *k* of rawhide clamped together, as shown. In Fig. 4 there is a metallic washer *k'* on each side of the rawhide, against which a nut k^2 is screwed, the middle of the cross-bar being threaded to receive the nuts. We prefer, however, the construction shown in Fig. 6, in which the rawhide layers are assembled on a threaded sleeve

or bushing k^3, the bore of which is somewhat larger than the round cross-bar H, so as to afford an annular oil-chamber between them. The sleeve projects at each end beyond the rawhide to receive a nut k^4, which has a bearing on the cross-bar and is counterbored and threaded to fit the sleeve. A washer k^5, of leather or other suitable material, is clamped between each end of the sleeve and the nut, thereby tightly closing the ends of the oil-chamber and preventing all rattling of the spool on the cross-bar. With this form of spool the bar is rigidly fastened to the reach and the spool rotates upon it.

To provide for the lateral movements of the buggy-body the cross-bar is constructed to slide axially in its bearings in Fig. 4, while in Fig. 6 the spool can slide freely on the bar.

In Fig. 5 the elongated eye h affords opportunity for the sidewise movement of the post.

In some cases it might be possible to dispense with the stays F; but we prefer to use them.

For vehicles having a single reach the construction of the post and guide may be suitably modified.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination, with the body and running-gear of a vehicle, of a vertical post secured to the under side of the body and composed of two members, a cross-bar secured to the reach and passing between said members, and a grooved rotatable spool mounted on the cross-bar and engaging with the post, substantially as described.

2. The combination, with the reach B and body D, of the double vertical post E, secured to the body, the cross-bar H, secured to the reach and passing through the post, and the rotatable spool K, mounted on the cross-bar and composed of rawhide, substantially as described.

3. The combination, with the reach B and the body D, of the double vertical post E, secured to the body, the round cross-bar H, secured to the reach, and the spool K, mounted on the cross-bar and composed of the rawhide k, the sleeve k^3, the nuts k^4, and washers k^5, substantially as described.

4. The combination, with the body D and double reach B, of the cross-bar H, attached to the reach, the double post E, fastened to the body and straddling the cross-bar, the stays F, attached to the body and to the post, and the rotatable and axially-movable grooved spool K, mounted on the cross-bar, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses

ADOLPH HOEFFLER.
FRANK L. G. CHAPMAN.

Witnesses:
R. H. BUTTERFIELD,
I. S. HULL.