No. 645,995. Patented Mar. 27, 1900.

A. G. BRUNSMAN.

THILL REINFORCE.

(Application filed May 27, 1899.)

(No Model.)

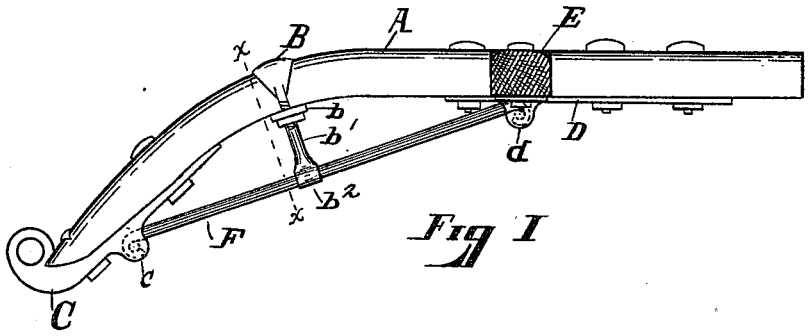
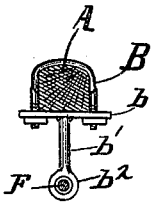


Fig 1

Fig 2



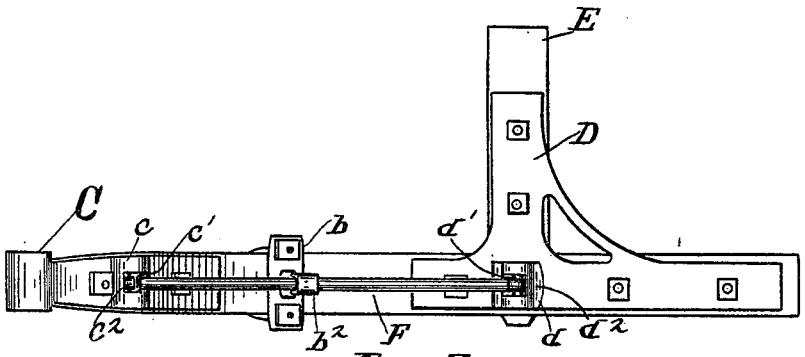


Fig 3

WITNESSES

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ANTHONY G. BRUNSMAN, OF CINCINNATI, OHIO.

THILL-REINFORCE.

SPECIFICATION forming part of Letters Patent No. 645,995, dated March 27, 1900.

Application filed May 27, 1899. Serial No. 718,483. (No model.)

To all whom it may concern:

Be it known that I, ANTHONY G. BRUNSMAN, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Thill-Reinforces, of which the following is a specification.

The object of my invention is a reinforce to be secured between the thill-iron and the plate for strengthening the cross-bar to take the strain off the curved part of the shaft and to keep it in the desired shape. This object is attained by the means described in the annexed specification and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a reinforce embodying my invention attached to a shaft, the cross-bar being shown in cross-section. Fig. 2 is a sectional detail view taken upon line $x\,x$ of Fig. 1 looking toward the right. Fig. 3 is an inverted plan view of the reinforce attached to the shaft, as in Fig. 1.

Referring to the parts, which are indicated by similar reference-letters wherever they occur throughout the various views, a clip B is secured by a clip-bar b around the shaft A at the point at which the greatest strain in the shaft occurs between the thill-iron C and the brace-plate D for strengthening the joint between the thill and the cross-bar E. The clip-bar has projecting downwardly from it a rod b', which terminates in a boss b^2, perforated to receive a brace-rod F, which is secured at one end to the thill-iron C and at the other to the plate D, from the under sides of both of which bosses c and d respectively project, which are recessed to receive the ends of the rod F, which hook over pins c' and d', supported by the sides of the recessed bosses, as shown in Fig. 2 and in dotted lines, Fig. 1.

In backing a vehicle the strain upon the shaft tends to make the curved part between the cross-bar and the thill-iron take a greater curvature and to bring the thill-iron and the brace-plate nearer each other. This strain is resisted by the ends of the brace-rod F bearing against the backs c^2 and d^2 of the bosses, the brace-rod being itself braced by the cross-rod b' of the clip-bar. In pulling, the strain tends to flatten the curve and to increase the distance between the thill-iron and the brace-plate. This strain is borne by the hook ends of the rod F engaging the pins c' and d' and the cross-rod holding the shaft from flattening.

While I have shown and described my reinforce as connected to a shaft, I contemplate selling it separate from the shaft, to be afterward attached to any ordinary curved shaft.

What I claim is—

1. In combination with the thill having a bent end the reinforce consisting of the thill-iron, the brace-plate, the brace-rod coupling the thill-iron and the brace-plate, and the cross-rod connecting the brace-rod and the shaft between the thill-iron and the brace-plate to strengthen and support the brace-rod, substantially as shown and described.

2. In combination with the thill having a bent end the reinforce consisting of the thill-iron, the brace-plate, the brace-rod coupling said iron and said plate, the clip for embracing the thill, and the clip-bar with a downwardly-projecting boss perforated to receive the brace-rod, substantially as shown and described.

3. In combination with the thill having the bent end the reinforce consisting of the thill-iron, the brace-plate, recessed bosses upon the under sides of the thill and the plate, the brace-rod supported in said bosses, a clip to embrace the shaft, and the clip-bar with a perforated boss to receive the brace-rod, substantially as shown and described.

4. In combination with the thill having a bent end the reinforce consisting of the thill-iron, the brace-plate, recessed bosses projecting from the under side of said iron and said plate, pins supported between the sides of the bosses, the brace-rod the ends of which hook over said pins, the clip to embrace the shaft, and the clip-bar from the under side of which projects a rod terminating in a boss to receive the brace-rod, substantially as shown and described.

5. A reinforce for bent shafts or thills consisting of the thill-iron, the brace-plate, the brace-rod coupling said thill and plate and a cross-brace sleeved upon said rod and having a clip-bar upon its upper end to be connected to a clip to be secured to the curve of the shaft, substantially as shown and described.

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Witnesses:

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