

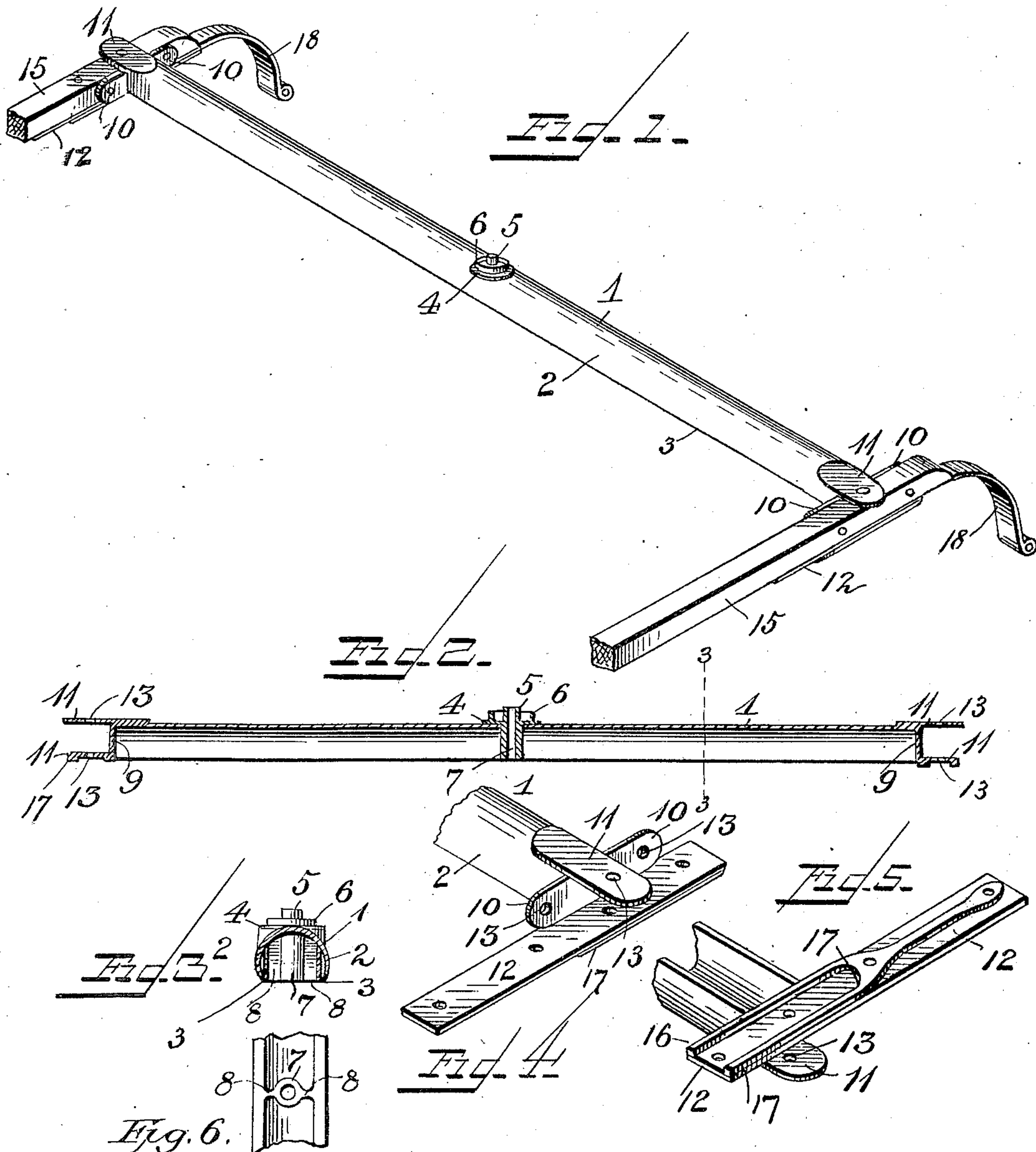
No. 704,460.

Patented July 8, 1902.

S. H. HAYDEN & H. D. HATHAWAY.
CROSS BAR FOR VEHICLE SHAFTS.

(Application filed Dec. 28, 1901.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

SAMUEL H. HAYDEN AND HARLOW D. HATHAWAY, OF FLINT, MICHIGAN.

CROSS-BAR FOR VEHICLE-SHAFTS.

SPECIFICATION forming part of Letters Patent No. 704,460, dated July 8, 1902.

Application filed December 26, 1901. Serial No. 87,308. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL H. HAYDEN and HARLOW D. HATHAWAY, citizens of the United States, residing at Flint, in the county of Genesee and State of Michigan, have invented new and useful Improvements in Cross-Bars for Vehicle-Shafts, of which the following is a specification.

Our invention relates to cross-bars for connecting vehicle-shafts; and the object of the same is to construct a metal bar of this description which shall be strong, light, and durable.

The novel construction used by us in carrying out our invention is fully described in this specification and claimed, and illustrated in the accompanying drawings, forming a part thereof, in which—

Figure 1 is a perspective of our cross-bar and fragments of the shafts. Fig. 2 is a longitudinal section of our bar. Fig. 3 is a transverse section of the same on the line 3 3, Fig. 2. Fig. 4 is a detail of one end of the bar. Fig. 5 is a detail of the same inverted. Fig. 6 is a detail of a fragment of the bar, showing the method of strengthening the same.

Like numerals of reference designate like parts in the different views of the drawings.

The numeral 1 designates the body of our bar, which is formed of heavy metal and is U-shaped in cross-section. The sides 2 are thickest in the middle and are rounded off on the lower edge at 3. A whiffletree-plate is mounted centrally the body and comprises a circular disk 4, having a central boss 5 and a circular flange 6. An apertured cylinder 7, having oppositely-extending ribs 8 thereon, is mounted intermediate the sides of the bar with its aperture in line with the aperture in the boss, and thereby serves as a guide for

the bolt for securing the whiffletree to hold the whiffletree from wobbling. The body 1 is closed at the ends at 9.

To serve to secure the bar to shafts, oppositely-extending vertical bars 10 are formed on the ends of the body 1, on each side thereof, horizontal ears 11 are formed on the top, and a horizontal strap or shaft-iron 12 is attached to the bottom. Apertures 13 are formed in the ears 10 and 11 and the strap 13 and serve to accommodate bolts 14 for securing the bar to the shaft 15. The strap 12 is reinforced on the bottom by ribs 16 and 17.

The shafts are attached to the vehicle by means of curved shaft-irons 18, secured by bolts 19 to the ends of the shafts 15 and the under sides of the straps 12.

In operation the bar is bolted to the shafts 15, which fit between the ear 11 and strap 12 and abutting the ears 10. It is evident from the construction of our bar that far greater strength is secured for the amount of material used than in the solid bar.

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

In a cross-bar for vehicles, the combination of a hollow body U-shaped in cross-section, a whiffletree-plate mounted centrally said bar, apertured ears and a strap mounted on the ends of said body to serve in securing said bar to shafts.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

SAMUEL H. HAYDEN.

HARLOW D. HATHAWAY.

Witnesses:

COLONEL O. SWAYZE,
PETER S. MCLAY.