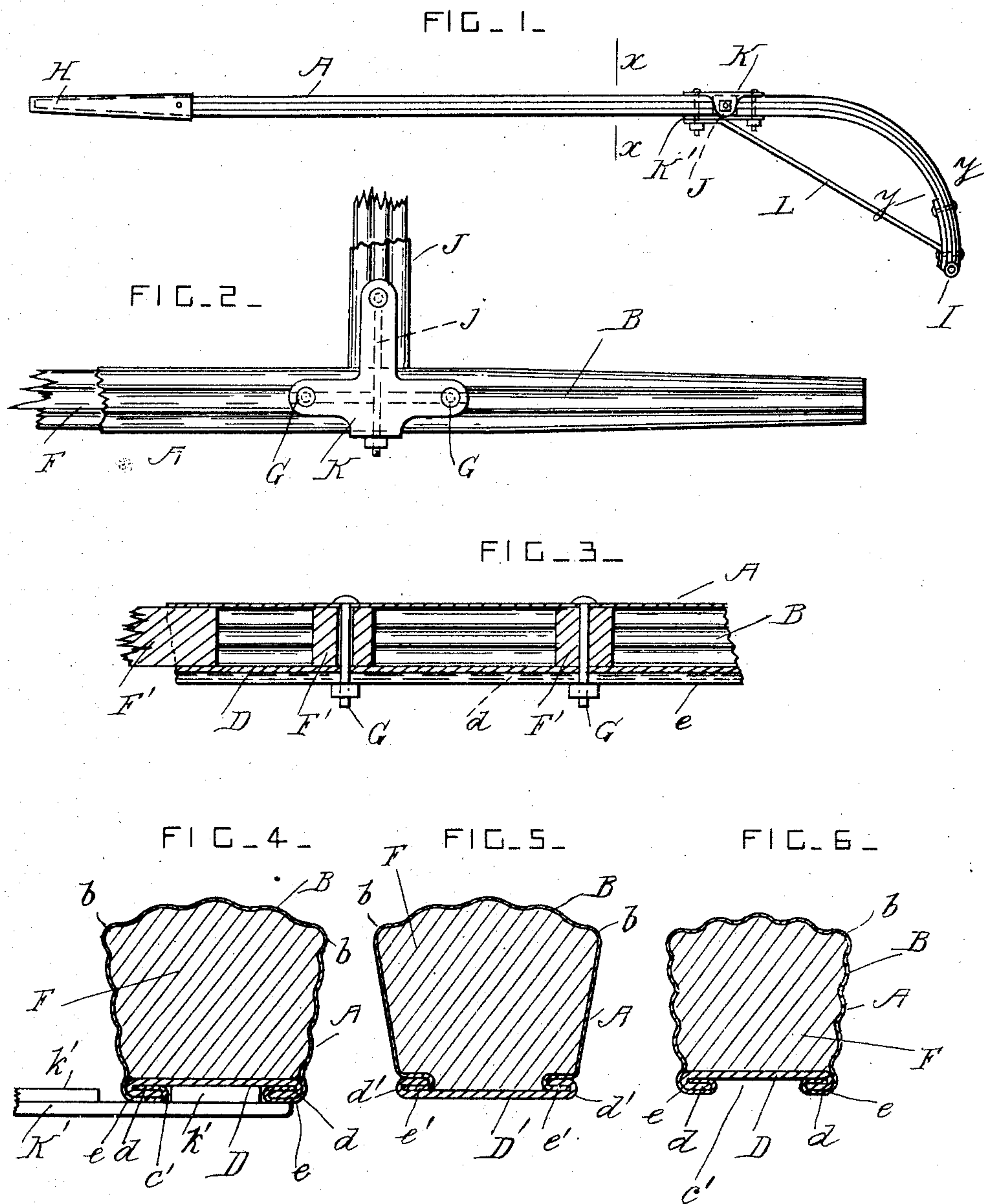


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PATENTED JAN. 7, 1908.

W. H. RAKESTRAW.
VEHICLE SHAFT.

APPLICATION FILED APR. 22, 1907.



WITNESSES:

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VEHICLE-SHAFT.

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To all whom it may concern:

Be it known that I, WILLIAM H. RAKESTRAW, a citizen of the United States, residing at Bloomington, in the county of McLean and State of Illinois, have invented certain new and useful Improvements in Vehicle-Shafts; and I do hereby 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.

This invention relates to shafts and draft-poles for vehicles; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings, Figure 1 is a side view of a pair of shafts constructed according to this invention. Fig. 2 is a plan view of the rear part of a portion of one shaft and its crossbar, drawn to a larger scale. Fig. 3 is a longitudinal section through a portion of a shaft or pole showing the filling in sections. Fig. 4 is a cross-section through the shaft taken on the line $x-x$ in Fig. 1. Figs. 5 and 6 are similar cross-sections taken on the line $y-y$ in Fig. 1 and showing also modifications.

A is the shaft or pole which is formed of thin sheet metal. This shaft is preferably provided with longitudinal corrugations or crimps B to strengthen and stiffen it, but it may be made without corrugations, if desired, on any one or on all of its surfaces, and any desired number of corrugations may be formed in any one of its surfaces. The sheet metal is bent to form a main portion or bar which is channel-shaped in cross-section, and the corrugations are so arranged that the bar has rounded corners b.

The bottom side of the shaft is formed of a separate plate of metal D of greater thickness than the main portion of the bar. This plate D is provided with two hook-shaped folds d at its edges which interlock with two hook-shaped folds e on the edges of the thin plate forming the main portion of the bar or shaft A. These interlocking folds are arranged at the bottom edges of the bar so that a channel c , is formed between them along the center of the underside of the bar. The bar is greatly strengthened by these interlocking folds, and they afford the necessary elasticity.

In the modification shown in Fig. 5 the plate D' is provided with upwardly projecting hook-shaped folds d' , and the folds e' on

the main portion of the shaft or pole are bent downwardly and outwardly. It is however preferred to make the plate D with downwardly projecting folds, as shown in Fig. 4, and the bar with upwardly projecting folds, as this makes a neater appearance when seen from the side.

F is a core, filling or packing arranged inside the hollow pole or shaft. This core preferably consists of a corrugated bar of wood which fits snugly within the metallic bar and which extends for its full length. The core may however be formed in separate pieces or sections F', as shown in Fig. 3, and these sections have holes or passages for the fastening bolts G, the object of the core being largely to re-inforce the corrugated metal where it is subjected to the strain of screwing up the nuts on the bolts G, and to prevent the corrugations from being distorted.

The core may be made of any other packing material besides wood, if desired, and cement or other convenient composition may be used.

When a portion of the shaft or pole is required to be tapered, the taper of the metallic bar is preferably formed by increasing the depth of the side corrugations gradually as the depth of the bar is decreased so that the bar is not weakened. Figs. 4 and 6 illustrate the difference in the depth of the bar and its corrugations at different points of its length.

The shafts are preferably furnished with tubular steel tips H, as it is inconvenient to continue the corrugations to the tips of the shafts. These tubular tips H are secured to the shafts or pole in any approved manner.

The rear ends of the shafts are provided with pivot eyes I of any approved construction for connecting them with a vehicle axle, and these eyes are secured to the shafts in any approved manner.

J is the crossbar which extends between the shafts. This crossbar is preferably formed of corrugated sheet metal the same as the shafts, and it may have a similar fillings but any other approved construction of crossbar may be used. The crossbar J is preferably secured to the shafts by eye-bolts j , and T-shaped brackets or plates K and K'. The plate K is arranged above the shaft and crossbar at the point of junction, and the plate K' is arranged underneath them. The bolts G pass through the said plates and secure the said parts together. The plates K

are preferably provided with ribs k' which fit inside the channels c' of the shafts and crossbar.

L is a brace for the curved rear end portion of each shaft, said brace being secured to the shaft in the ordinary manner.

The tapered portion of the shaft may be formed in any other approved manner besides that hereinbefore described.

10 What I claim is:

1. A shaft or pole, comprising a substantially rectangular bar of thin sheet metal, the main portion of the said bar being channel-shaped in cross section and provided at 15 the bottom edges of its sides with inwardly projecting hook-shaped folds, and a bottom plate which extends the full width of the bottom portion of the said bar between its said sides and which is provided with hook-shaped folds which interlock with the afore- 20 said folds.

2. A shaft or pole, comprising a channel-

shaped bar of thin sheet metal provided with longitudinal corrugations and having hook-shaped folds at the bottom edges of its sides, 25 and a bottom plate also provided with hook-shaped folds which interlock with the afore-said folds.

3 The combination, with a pair of tubular shafts, and a crossbar between them, each 30 of the said shafts being formed of plates of thin sheet metal coupled together by interlocking folds arranged at their lower parts and having longitudinal channels between them, of brackets provided with ribs which 35 engage with the said channels, and fastening devices securing the said brackets to the said shafts and crossbar.

In testimony whereof I have affixed my signature in the presence of two witnesses.

WILLIAM H. RAKESTRAW

Witnesses:

E. E. DONNELLY,

L. O. WINTER.