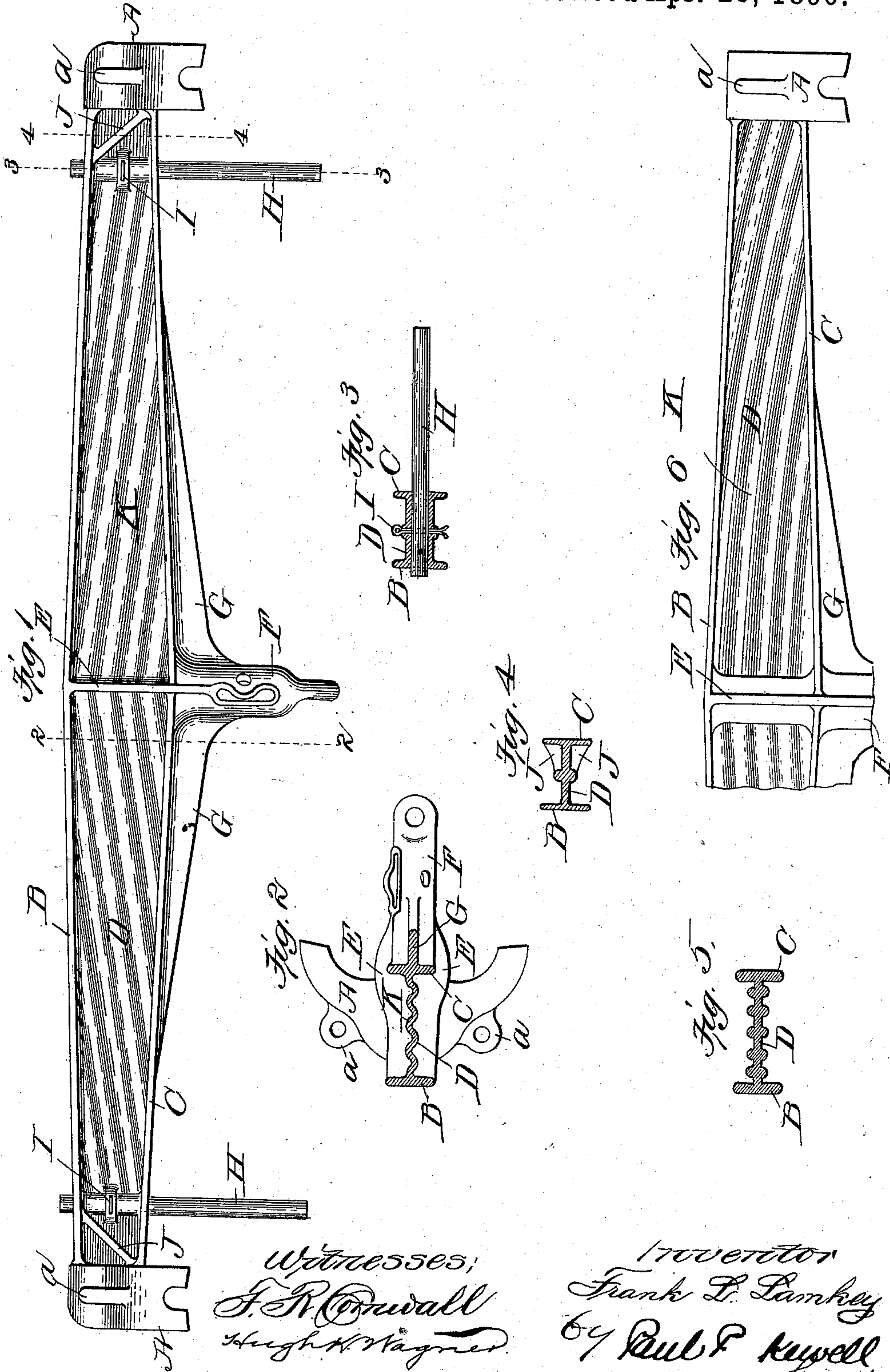


(No Model.)

F. L. LAMKEY.  
BRAKE BEAM.

No. 558,965.

Patented Apr. 28, 1896.



Witnesses;  
J. R. Cornwall  
Hugh H. Wagner

Inventor  
Frank L. Lamkey  
by Paul F. Kuyell  
Att'y.



# UNITED STATES PATENT OFFICE.

FRANK L. LAMKEY, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO  
PETER H. MURPHY, OF EAST ST. LOUIS, ILLINOIS.

## BRAKE-BEAM.

SPECIFICATION forming part of Letters Patent No. 558,965, dated April 28, 1896.

Application filed January 20, 1896. Serial No. 576,162. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK L. LAMKEY, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented a certain new and useful Improvement in Brake-Beams, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, wherein—  
10 Figure 1 is a top plan view of my improved brake-beam. Fig. 2 is a cross-sectional view on line 2 2, Fig. 1. Fig. 3 is a cross-sectional view taken on line 3 3, Fig. 1. Fig. 4 is a cross-sectional view taken on line 4 4, Fig. 1.  
15 Fig. 5 is a cross-sectional view showing a modified form of web. Fig. 6 is a top plan view showing the corrugations on a curved line and extending to the head.

This invention relates to a new and useful improvement in brake-beams, and is designed to be made in one piece, including the brake-heads, to obviate the loosening of the several parts where the beam is constructed of many different pieces.

25 The object of this invention is to construct a beam of the character described in such manner that the strain is distributed throughout the beam, the beam itself being simple, compact, and rigid.

30 With this object in view the invention consists in forming the beam proper substantially I-shaped in cross-section, and in strengthening such part by flanges, or corrugations, or both, at points where the beam is subjected to the greatest strain, so that the beam in ordinary use is practically unbreakable, having a safety factor far exceeding the demand, while its weight is comparatively small.

40 In the drawings, A indicates the brake-heads, which are of any ordinary or approved construction, said heads being preferably provided with lugs *a* on their upper and lower sides for the attachment of brake safety-chains. I prefer to form these lugs on each side of the head, so that the beam may be reversed and used equally well.

45 B indicates a back flange, C a front flange, and D a web between said flanges, said parts extending from head to head and forming a connection between the heads of substantially I shape in cross-section.

The channels formed by the above parts are interrupted about the middle of the structure by flanges E, which preferably bulge out above and below the front flange in order to give strength to the fulcrum projection F, to which said flanges are connected. This "fulcrum projection," as I have termed it, is slotted for the attachment of the brake-lever, as is usual. In addition to the flanges E, which brace said projection F vertically, said projection is braced against lateral movement by flanges or webs G, which taper back to the front flange C, said flanges G being preferably centrally disposed to the projection F and the flanges C.

H indicates guide-rods which are secured in openings formed through the flanges B and C and the web D. The purpose of these guide-rods is to guide the brake-shoes in their application to the wheels by passing between the wheels and bearing thereagainst should the shoes strike to either side of the tread. To secure these guide-rods in place, I perforate the material of web D, which is bulged out to form the opening to receive these rods, and insert through said perforation a cotter-pin I, which cotter-pin is adapted to pass through an alining perforation in the guide-rod. It frequently happens, due to lack of proper adjustment of the beam, such as by improper hanging or from other causes, that one or both of these guide-rods are worn through by contact with the wheel, and of course when in such condition are useless for the purpose for which they were intended. This being true, I prefer to extend said rod somewhat behind the beam and provide the same with an additional perforation or perforations, so that should the front end be ground off the rod may be projected forward and secured in a new position, answering the purpose of a new rod. I also prefer to form some of these perforations at right angles to the others in order that the rod may be partially rotated to present a new wear-surface to the wheel.

Of course it is understood that at all times the rod may be rotated half around and a new surface presented, the cotter-pin being used in the same perforation.

The bulging of the material of web D for the reception of the guide-rods and the flanges



E practically divides the area of web D into four parts, considering one side of the beam only. In the spaces adjacent to the brake-heads are arranged flanges J, said flanges being preferably diagonally disposed and bracing the neck of the beam at its point of connection with the brake-heads. The spaces on each side of the central web E are formed with corrugations K, which are preferably longitudinally and obliquely disposed in such directions as are best adapted to resist the strain to which the beam is subjected—that is, these corrugations are arranged in oblique lines relative to the longitudinal axis of the beam, the corrugations on each side of the middle of the beam being disposed in opposite directions. As shown in the drawings, the flanges J extend from the junction of the front flange and the head in an oblique line back to the back flange some distance away from the head, throwing the line of greatest resistance of said flange as near in line with the strain of the beam at that point as is practicable. The corrugations K are so disposed that a corrugation having one terminus at the junction of the flange E and the back flange will have its other terminus at the front flange adjacent to the head. The other corrugations being parallel will have their termini accordingly, all of said corrugations being so disposed as to be best adapted to meet the resistance of the strain to which the beam is subjected.

I am aware that many minor changes in the construction, arrangement, and combination of the several parts of my device may be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

In Figs. 5 and 6 I have shown modified forms which are comprehended within the scope of my invention in which the guide-rods are dispensed with, and also the flanges J. In these figures I have shown in one instance raised ribs in lieu of corrugations and in the other the corrugations as being curved instead of straight and extending to the brake-heads. It is also obvious that, if desired, the brake-heads could be removably mounted on the ends of the beam, instead of being formed integral therewith, without in the least departing from the spirit of my invention.

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

1. In a brake-beam, the combination with the brake-heads, of the front and back flanges, a web connected to said flanges, a fulcrum projection, and flanges extending from the

back flange to and over the front flange for strengthening said projection; substantially as described.

2. In a brake-beam, the combination with the brake-heads, of front and back flanges, a web between said flanges, a fulcrum projection, and lateral flanges for bracing said fulcrum projection; substantially as described.

3. In a brake-beam, the combination with the brake-heads, of front and back flanges, a web connected to said flanges, a fulcrum projection, flanges E for bracing said projection vertically, and flanges C for bracing said projection laterally; substantially as described.

4. The combination with a brake-beam which is formed with openings, of guide-rods which are fitted in said openings, said guide-rods being perforated, and cotter-pins which pass through said perforations for holding the guide-rods in position on a beam; substantially as described.

5. The combination with the front and back flanges of a brake-beam, a fulcrum projection, brake-heads, and a corrugated web between said front and back flanges; substantially as described.

6. In a brake-beam, the combination with the brake-heads, of front and back flanges, a fulcrum projection, flanges for bracing said front and back flanges, and a corrugated web between said front and back flanges; substantially as described.

7. The combination with the brake-heads, of front and back flanges, a fulcrum projection, and a corrugated web between said front and back flanges, the corrugations of which are obliquely disposed to the longitudinal axis of the beam; substantially as described.

8. In a brake-beam, the combination with the brake-heads, of the front and back flanges, the fulcrum projection, and obliquely-disposed flanges J for bracing said front and back flanges adjacent to the heads; substantially as described.

9. In a brake-beam, the combination with the brake-heads, of the front and back flanges, a fulcrum projection, a corrugated web between said front and back flanges, and flanges J for bracing the neck of the beams adjacent to the heads; substantially as described.

In testimony whereof I hereunto affix my signature, in presence of two witnesses, this 7th day of January, 1896.

FRANK L. LAMKEY.

Witnesses:

F. R. CORNWALL,

HUGH K. WAGNER.