No. 711,283. Patented Oct. 14, 1902.

L. T. CANFIELD.

COMBINED DRAFT AND BUFFING FRAME FOR RAILWAY CARS.

(Application filed Nov. 4, 1901.)

(No Model.) 4 Sheets—Sheet 1.

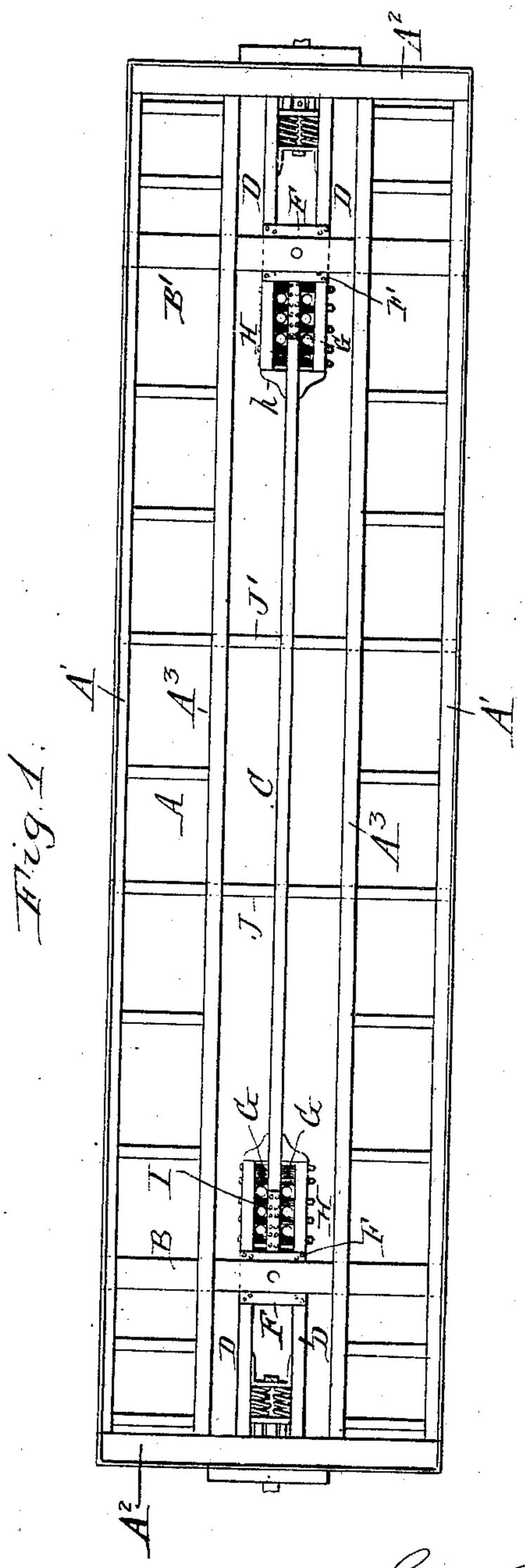

Fig. 1.

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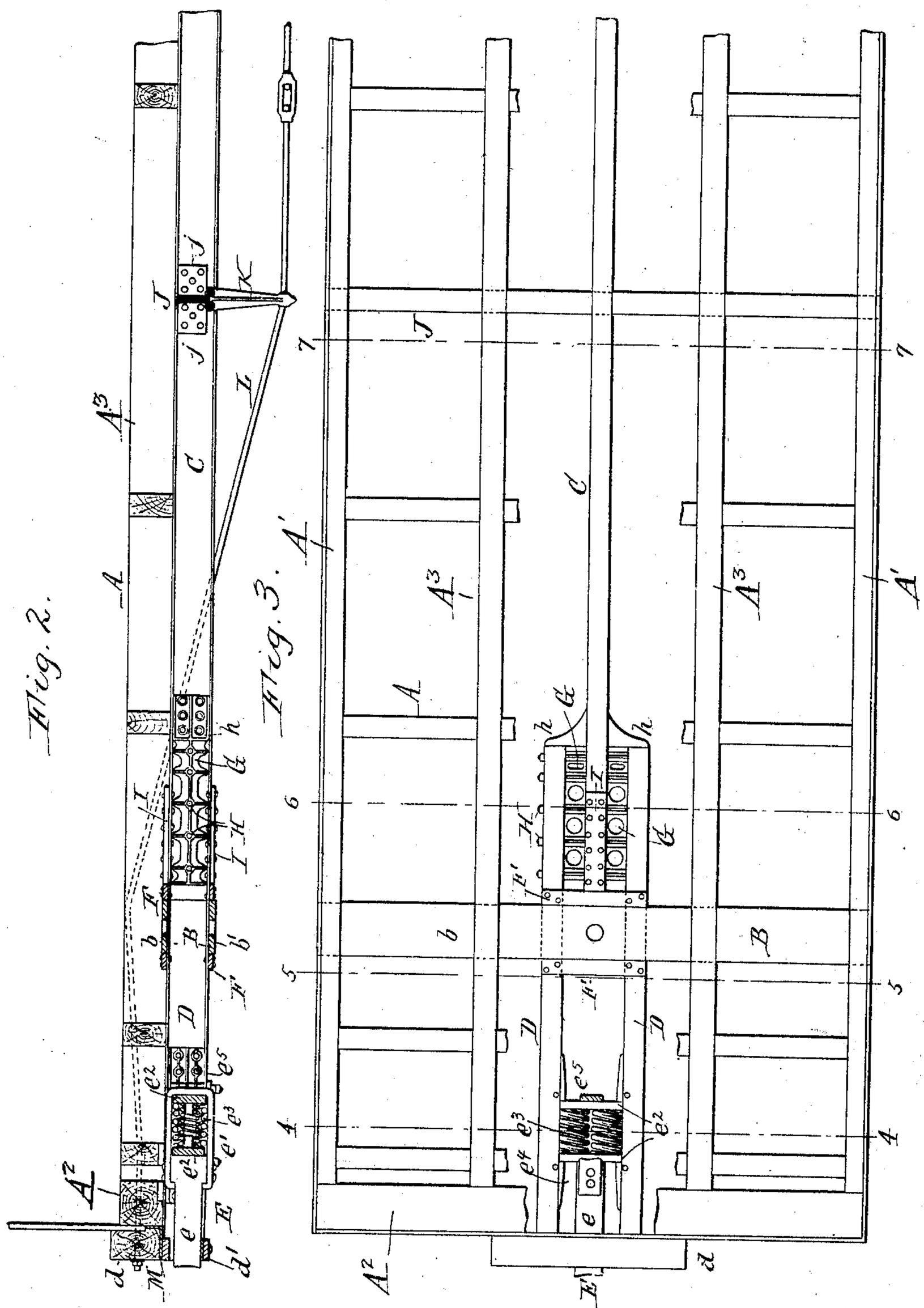

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(No Model.) 4 Sheets—Sheet 3.

Fig. 4.

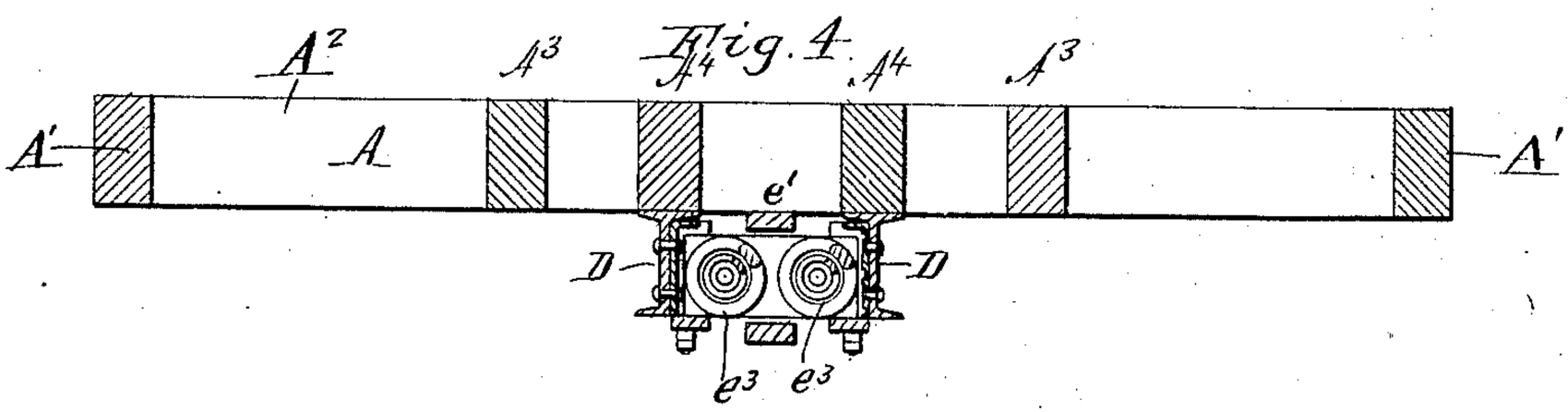


Fig. 5.

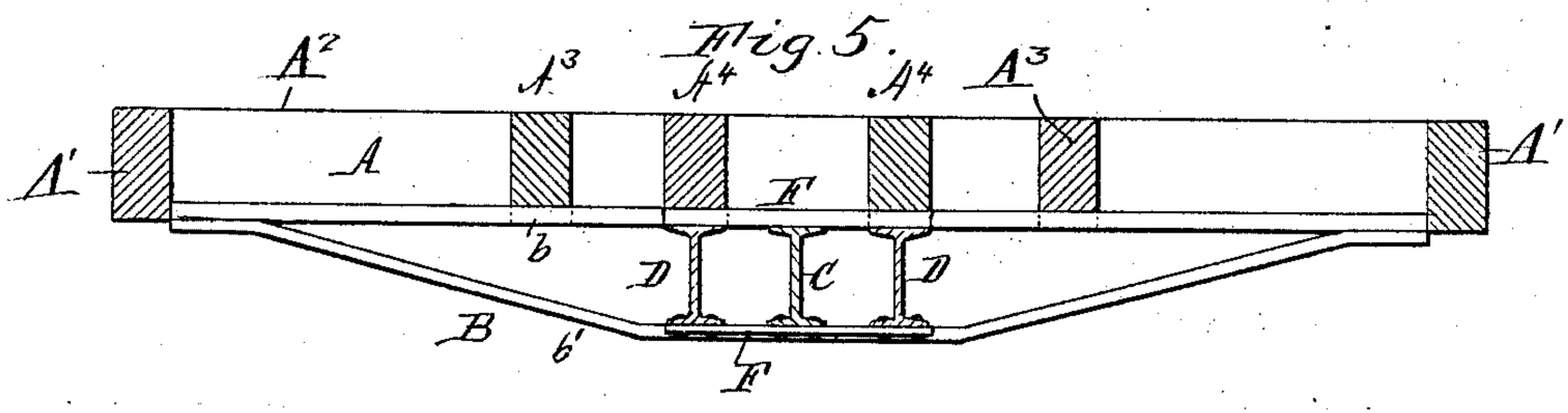


Fig. 6.

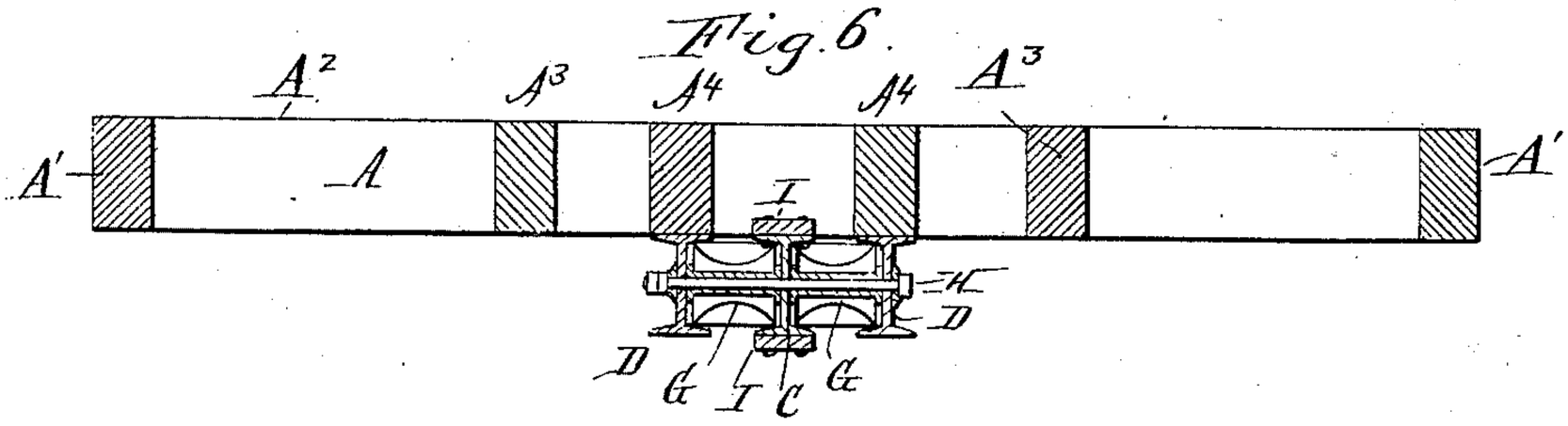
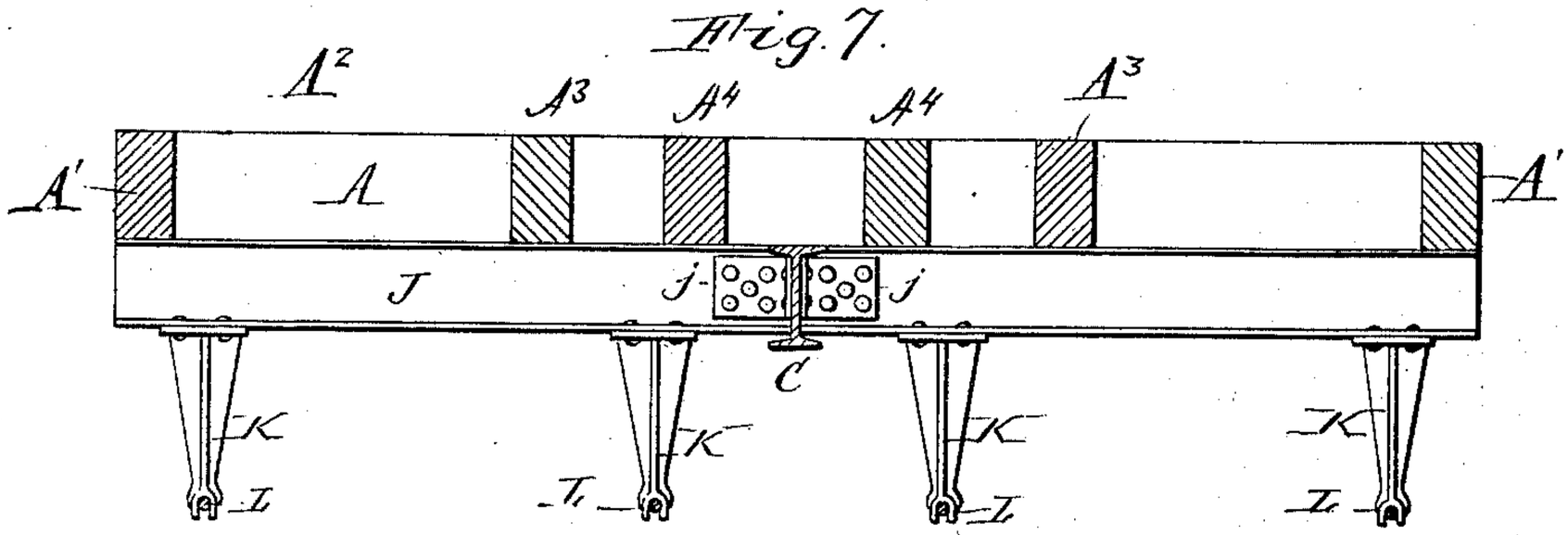


Fig. 7.



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(No Model.) 4 Sheets—Sheet 4.

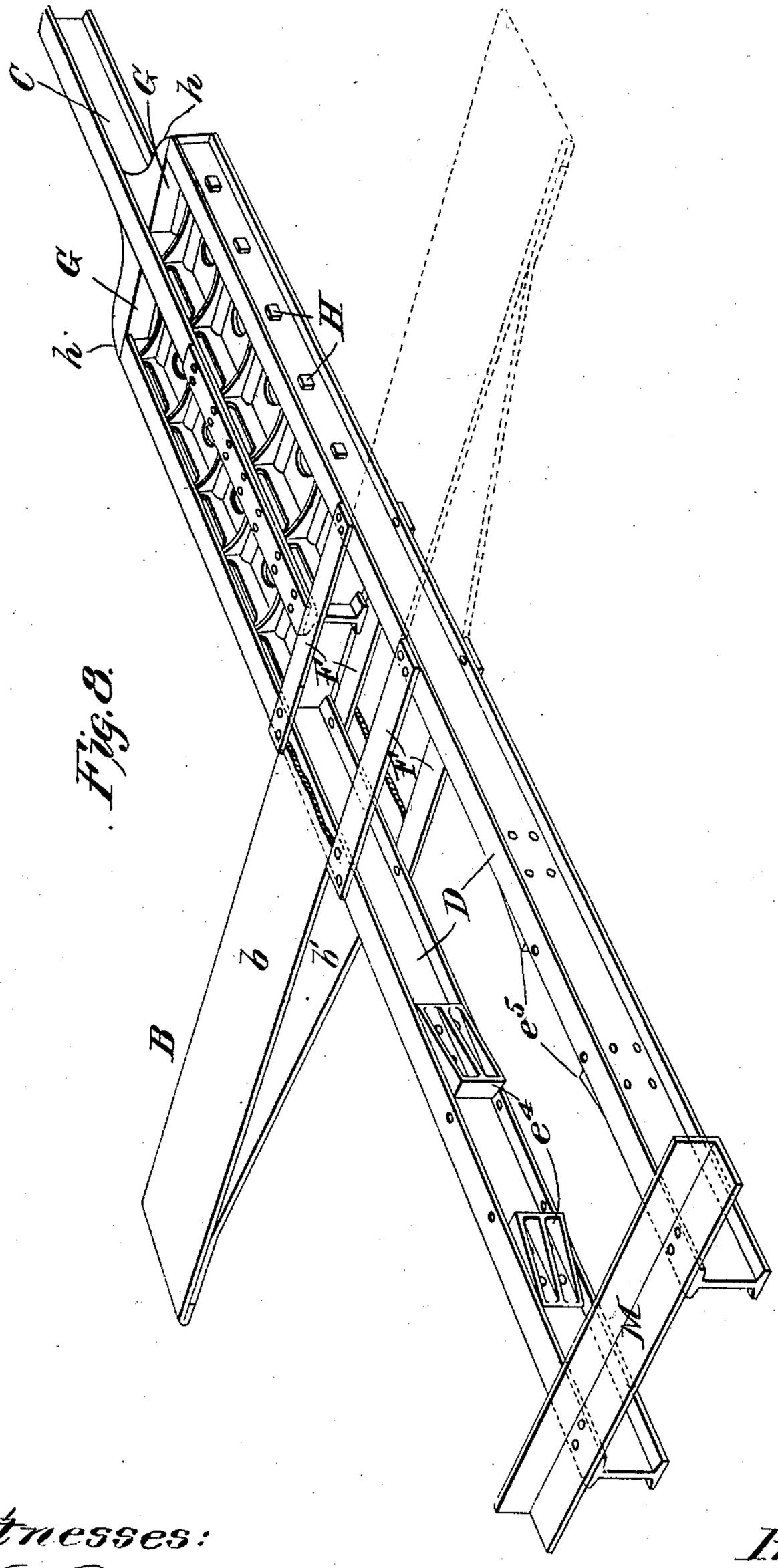

Fig. 8.

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UNITED STATES PATENT OFFICE.

LEWIS T. CANFIELD, OF SCRANTON, PENNSYLVANIA.

COMBINED DRAFT AND BUFFING FRAME FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 711,283, dated October 14, 1902.

Application filed November 4, 1901. Serial No. 81,008. (No model.)

To all whom it may concern:

Be it known that I, LEWIS T. CANFIELD, a citizen of the United States, residing at Scranton, in the county of Lackawanna, in the State of Pennsylvania, have invented new and useful Improvements in a Combined Draft and Buffing Frame for Railway-Cars, of which the following is a specification.

This invention relates to a combined draft and buffing frame or structure for railway-cars and the like, which is arranged beneath the usual floor-frame and extends longitudinally from end to end of the car for the purpose of carrying the draw-bar attachments at the opposite ends of the car and for receiving and transmitting the draft and buffing strains.

By providing a subframe of the character indicated the pulling and buffing strains are directly transmitted therethrough, as the "load," if such strains may be so termed, will be transmitted through the path of greatest rigidity. In this manner the floor-frame, or rather the longitudinal sills or members thereof, are relieved from the pulling and buffing strains which have heretofore been imposed upon them and, furthermore, continuous draft-rods are dispensed with.

The object of the invention is to provide a light, strong, and durable frame or structure to accomplish the above and which will be comparatively simple.

In the accompanying drawings, consisting of four sheets, Figure 1 is a plan view of the floor-frame of a railway-car, the center sills being removed and portions of the transverse floor-sills being broken away to more clearly show my improved buffing-frame in position underneath. Fig. 2 is an enlarged longitudinal sectional elevation of one end of the frame shown in Fig. 1. Fig. 3 is a broken plan view of the parts shown in Fig. 2. Fig. 4 is a transverse sectional view on the line 4 4, Fig. 3. Fig. 5 is a similar sectional view on the line 5 5, Fig. 3. Fig. 6 is a similar sectional view on the line 6 6, Fig. 3. Fig. 7 is a similar sectional view on the line 7 7, Fig. 3. Fig. 8 is a detail view of one end of my improved frame.

Referring to the drawings, A represents the floor-frame of a railway-car, which, as usual, is shown as being constructed of side sills A′, end sills A^2, intermediate longitudinal sills A^3, and center sills A^4.

B B′ represent the usual transverse body-bolsters, arranged one near each end of the floor-frame. These body-bolsters, as shown, are preferably constructed of separated upper and lower steel bars, (represented, respectively, at *b b′*.)

The combined draft and buffing frame, as will be seen from the drawings, comprises a centrally-disposed metal member C, preferably I-shaped in section, which extends from one body-bolster to the other, and a pair of separated draft-beam members D D, arranged longitudinally at each end of the car, the members of each pair being connected at their rear or inner ends to the opposite ends of the central longitudinal member. Inasmuch as the arrangement and connection of both pairs of draft-beams are the same, a description of one pair is deemed sufficient. The members D D are preferably I-shaped in section and are arranged parallel. The forward or outer ends of these members, as will be seen, extend beneath the buffer-beam *d* and are supported therefrom in any suitable manner, as by a yoke *d′*, and their rear or inner ends pass between the upper and lower bars *b b′* of the adjacent body-bolster, by which they are supported, and thence extend rearwardly or inwardly beyond the same on opposite sides of the contiguous end of the central member C. The members D D, support the draw-bar attachments, which are represented at E, and which may be of any approved type. As shown in the drawings, each draw-bar *e* is provided at its inner end with a yoke *e′*, between the inner end of which, and the inner end of the draw-bar, are arranged the follower-plates e^2 and the draft-springs e^3. The follower-plates are arranged between the inner and outer castings, (represented at e^4 e^5,) which are securely attached to the inner faces of the members D D. The members D D are connected by top and bottom tie plates or bars F, one pair arranged in front of and another pair being arranged in the rear of the body-bolster, and adjacent the front and rear edges of the upper and lower bars of the same. The single central member C, as stated, extends between the rear or inner ends of the members D D and is secured to the same, pref-

erably as shown in the drawings, by means of castings G G, one of which is located on each side of the member C, between the same and the proximate face of the rear end of the adjacent members D D. The castings G may be of any suitable construction, preferably that shown in the drawings, from which it will be observed that each casting is provided with horizontal and vertical strengthening-webs and transverse bolt-holes.

H represents transverse horizontal bolts which pass through the overlapping ends of the members D D and the central member C and through the alined bolt-holes in the castings for rigidly tying said parts together. The rear or inner ends of the castings G preferably project beyond the ends of the members D D and are provided with lateral shoulders *h*, against which the upper ends of said members abut. The member C, as will be seen, extends to the body-bolster and has secured to the upper and lower faces of its ends longitudinal plates or bars I, which at their ends abut against the inner tie plates or bars F. It will thus be seen that the members D D, at opposite ends of the car, and the longitudinal central member C are rigidly and firmly secured together and constitute, in effect, a single continuous frame or structure which extends from end to end of the car, and preferably below the floor-frame thereof, for connectively carrying the draw-bar attachments.

J J represent flying transoms, preferably I-shaped in section, which are arranged transversely the floor-frame, extending from the central member C, to which the inner ends of said transoms are secured in any preferred manner, as by means of the angle-plates or corner-brackets *j* shown in the drawings.

K represents the usual queen-posts or struts, which, as will be observed, are secured to and depend from the under side of the transoms J J, and L represents the usual longitudinal truss-rods, secured at their opposite ends in any preferred manner to the opposite ends of the floor-frame and engaging in sockets or seats formed in the lower ends of the queen-posts.

M represents angle tie-bars, one of which is arranged at each end of the car across the upper faces of the end portions of the members D D, to which it is secured. The said tie-bars extend up and bear against the outside faces of the end sills of the car-body between the same and the buffer-sills.

I claim as my invention—

1. The combination with a wooden floor-frame, of a structure comprising parallel draft members, and a rigid connecting member extending longitudinally the car and attached to the inner ends of the draft members at the opposite ends of the car; substantially as described.

2. The combination with a floor-frame, of a structure immovably attached thereto for connectively carrying the draw-bars, said structure comprising draft members and a centrally-arranged rigid connecting member; substantially as described.

3. The combination with a floor-frame, of a structure for connectively carrying the draw-bars, said structure comprising draft members, castings for spacing the inner ends of the draft members, and a single connecting member attached to said castings and centrally arranged with respect thereto; substantially as described.

4. The combination with a floor-frame, of a structure for connectively carrying the draw-bars, said structure comprising draft members, a centrally-arranged connecting member, and flying transoms extending from said member; substantially as described.

5. The combination with a floor-frame, of a structure for connectively carrying the draw-bars, said structure comprising draft members, a centrally-arranged connecting member, flying transoms extending therefrom to the sides of the floor-frame, and truss-rods cooperating with said transoms; substantially as described.

6. The combination with a floor-frame, of a structure for connectively carrying the draw-bars, said structure comprising draft members, a centrally-arranged connecting member, flying transoms extending therefrom to the sides of the floor-frame, struts depending from said transoms, and longitudinal truss-rods coöperating with said struts; substantially as described.

7. The combination with a floor-frame, of a structure for connectively carrying the draw-bars, said structure comprising draft members, tie-bars M across the ends of said draft members, buffer-bars abutting against said tie-bars, longitudinal truss-rods passing through said buffer-bars, a centrally-arranged member for connecting the draft members, transoms extending therefrom, and struts depending from said transoms, in which struts the longitudinal truss-rods are seated; substantially as described.

8. The combination with a wooden floor-frame, of bolsters arranged thereunder for supporting said frame, and a structure lying in the horizontal plane of the bolsters for connectively carrying the draw-bars, said structure comprising draft members which extend inwardly beyond the bolsters, and a member rigidly connecting the inner ends of said draft members; substantially as described.

9. The combination with a floor-frame, of bolsters arranged near each end thereof, and a structure for connectively carrying the draw-bars, said structure comprising draft members which extend inwardly beyond the bolsters, tie-plates connecting said draft members and arranged on each side of said bolsters, and a centrally-arranged member connecting the inner ends of said draft members; substantially as described.

10. The combination with a floor-frame, of

bolsters arranged near each end thereof, and a structure for connectively carrying the draw-bars, said structure comprising draft members which extend inwardly beyond the bolsters, said draft members passing through the bolsters, tie-plates for connecting said members on each side of said bolsters, castings carried by the inner ends of said members, and a centrally-arranged connecting member attached to said castings; substantially as described.

11. A draft-frame for railway-cars comprising two pairs of draft members designed to receive the draw-bars respectively, a connecting member, and castings forming filler-blocks for effecting a rigid connection between the inner ends of the draft members and said connecting member; substantially as described.

12. A draft-frame for railway-cars comprising two pairs of draft members, castings G between the inner ends of said members, a centrally-arranged connecting member C, bolts for connecting said parts together, and means for immovably securing said draft-frame to the floor-frame of a car; substantially as described.

Witness my hand this 30th day of September, 1901.

LEWIS T. CANFIELD.

Witnesses:
A. A. CHASE,
JOHN SHIRAS.