

E. C. WASHBURN.  
BUMPER BEAM DRAFT RIGGING.  
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930,247.

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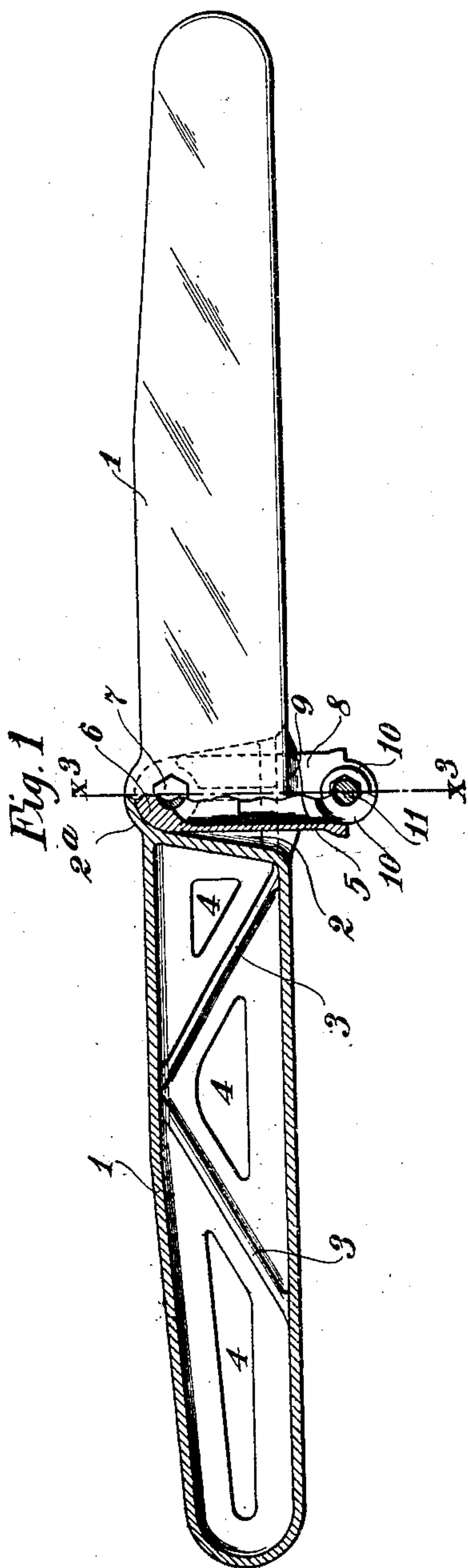


Fig. 1.

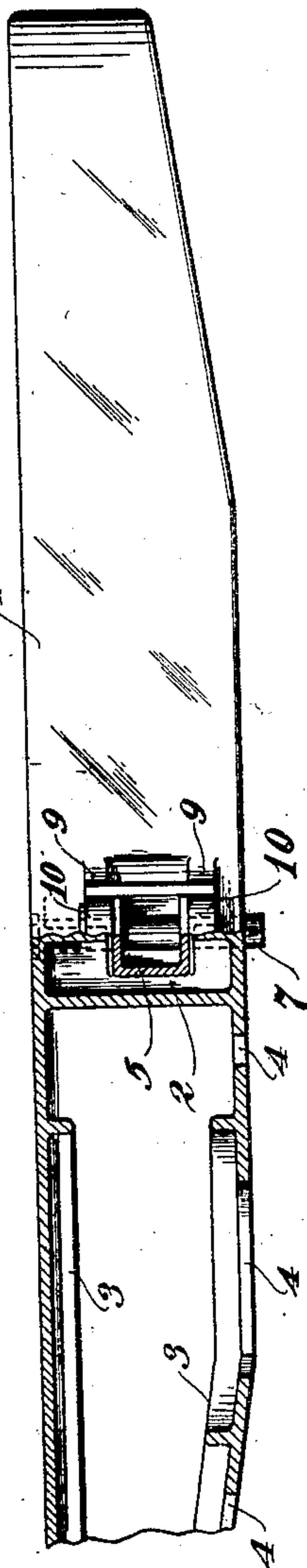


Fig. 2.

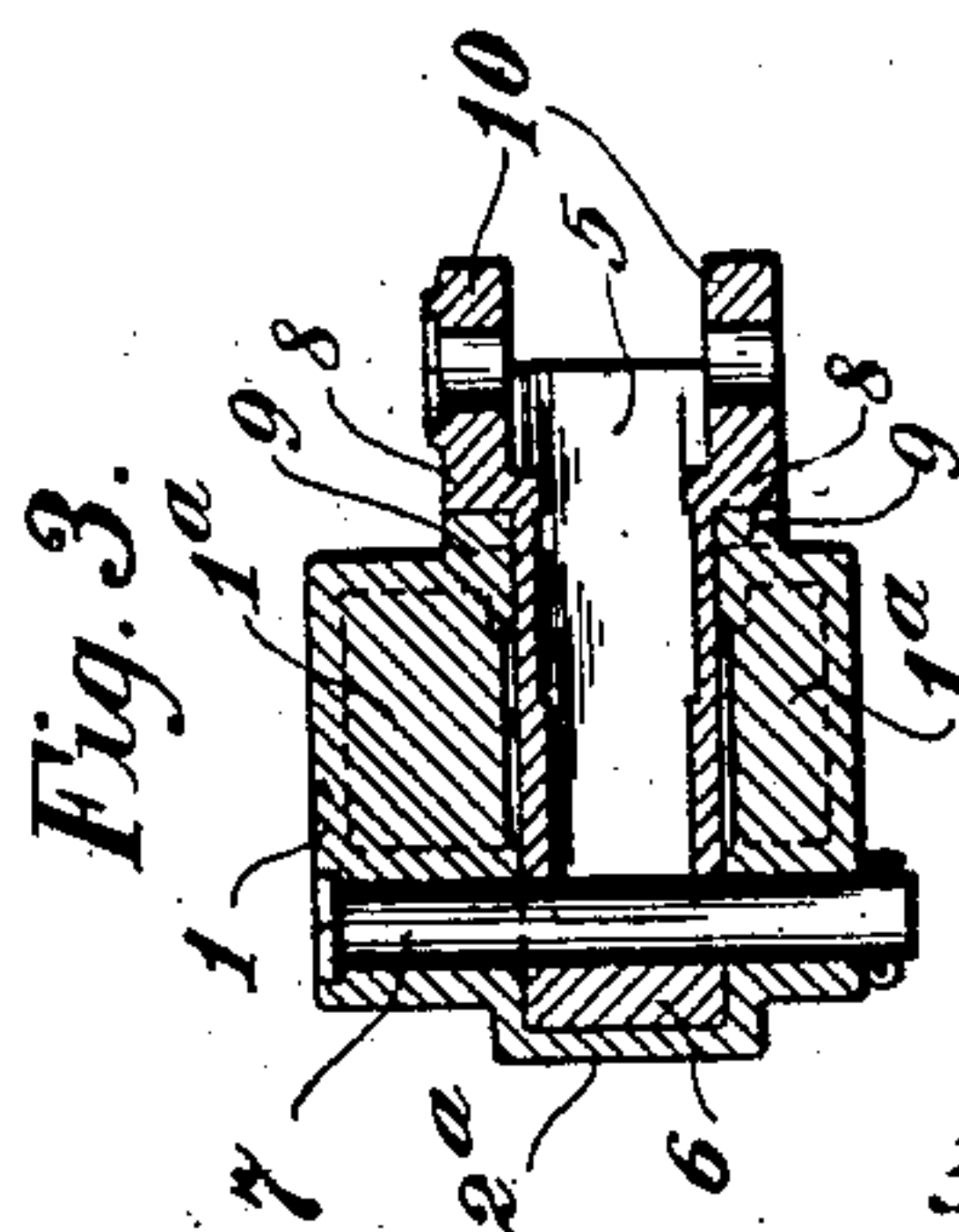


Fig. 3.

Witnesses:  
L. L. Simpson.  
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# UNITED STATES PATENT OFFICE.

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## BUMPER-BEAM DRAFT-RIGGING.

No. 930,247.

Specification of Letters Patent.

Patented Aug. 3, 1909.

Application filed August 12, 1907. Serial No. 388,104.

*To all whom it may concern:*

Be it known that I, EDWIN C. WASHBURN, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Bumper-Beam Draft-Riggings; 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.

My invention has for its object to improve that type of draft rigging wherein the coupler draft bar is connected to and has its base of reaction against a bumper beam.

To the above ends, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to these drawings; Figure 1 is a view partly in plan and partly in horizontal section showing my invention incorporated in a bumper beam and draft bar. Fig. 2 is a view partly in front elevation and partly in vertical section, with some parts broken away, showing the parts illustrated in Fig. 1; and Fig. 3 is a vertical section taken on the line  $x^3 x^3$  of Fig. 1.

The bumper beam 1 is made hollow, being preferably cast in steel. At its central portion it is provided with a bar receiving pocket 2, the top and bottom of which are formed by thickened portions 1<sup>a</sup> of the upper and lower plates of the beam, and the sides of which are formed by ribs that diverge slightly in a direction from the rear toward the right face of the beam. The upper and lower plates of the beam 1, on each side of the pocket 2, are formed with internal forwardly diverging reinforcing ribs 3, and between and on each side of these ribs 3 the lower plates are preferably cut away, as shown at 4. By this arrangement, a maximum strength is given to the beam with a minimum amount of metal. The said forwardly diverging reinforcing ribs 3 produce a trough-like reinforcement for the said upper and lower plates of the bumper beam. The draft bar 5, which is short, is also preferably cast hollow in steel. This draft bar is extended into the pocket 2, and

is mounted therein with freedom for lateral oscillatory movements at its forwardly projecting front end. The inwardly projecting rear end of the draft bar 5 is formed semi-cylindrical in a vertical plane, as shown at 6, and closely fits the correspondingly shaped seat 2<sup>a</sup> formed at the back or inner extremity of the pocket 2 and, as shown, constituting the bulge in the rear plate or wall of the bumper beam. A vertically extended coupling pin or bolt 7 is extended through and pivotally connects the inner end of the draft bar 5 to the bumper beam 1. The axis of this coupling pin 7 is located coincident with the axis of the engaging semi-cylindrical extremities of the pocket 2 and draft bar 5, and when slight play is permitted between said pin and the parts which it pivotally connects, the semi-cylindrical or rounded extremities of said draft bar and pocket will be pressed directly into engagement under bumping strains.

At the upper and lower surfaces of its projecting end, the draft bar 5 is provided with buffer lugs or shoulders 8 that engage with buffer lugs or shoulders 9 formed on the forwardly projecting face of the beam 1 above and below the said pocket 2. The engaging surfaces of these buffer lugs or shoulders 8 and 9 extend concentric to the axis of the pivot bolt 7, and hence, concentric to the axis of the rounded inner end of said draft bar. In this way, buffing strains are transmitted from the draft bar 5 to the bumper beam 1 at several different places, to-wit, both at the front and rear of the said beam.

The forwardly projecting end of the draft bar 5 terminates in vertically spaced ears 10 to which a coupling head, not shown, is adapted to be connected for slight pivotal motion by means of a coupling pin 11.

Draft strains on the draft bar are, of course, taken and transmitted to the bumper beam through the coupling pin 7. The lateral oscillatory movements of the draft bar, permitted by the forwardly diverging side walls of the pocket 2, permit the draft bar to adapt itself to curves.

A device of the kind described is especially adapted for application to the front end of a locomotive, but may, of course, be applied to the rear end of the engine or to the ends of cars or tenders.

What I claim is:—

1. A hollow cast bumper beam having a



draft bar receiving pocket at its central portion, and the upper and lower plates of said beam having internal diverging reinforcing ribs on the opposite sides of said pocket, certain of said reinforcing ribs being extended from the forward portions of the side walls of said pocket, substantially as described.

2. A hollow cast bumper beam having an integrally formed centrally located draft bar receiving pocket extending to the rear wall thereof, and having forwardly diverging

sides, the said beam also having diagonal reinforcing ribs extending from the forward portions of the sides of said pocket to the rear wall of said beam.

In testimony whereof I affix my signature in presence of two witnesses.

EDWIN C. WASHBURN.

Witnesses:

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