

E. C. WASHBURN.  
BUMPER BEAM DRAFT RIGGING.  
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930,248.

Patented Aug. 3, 1909.

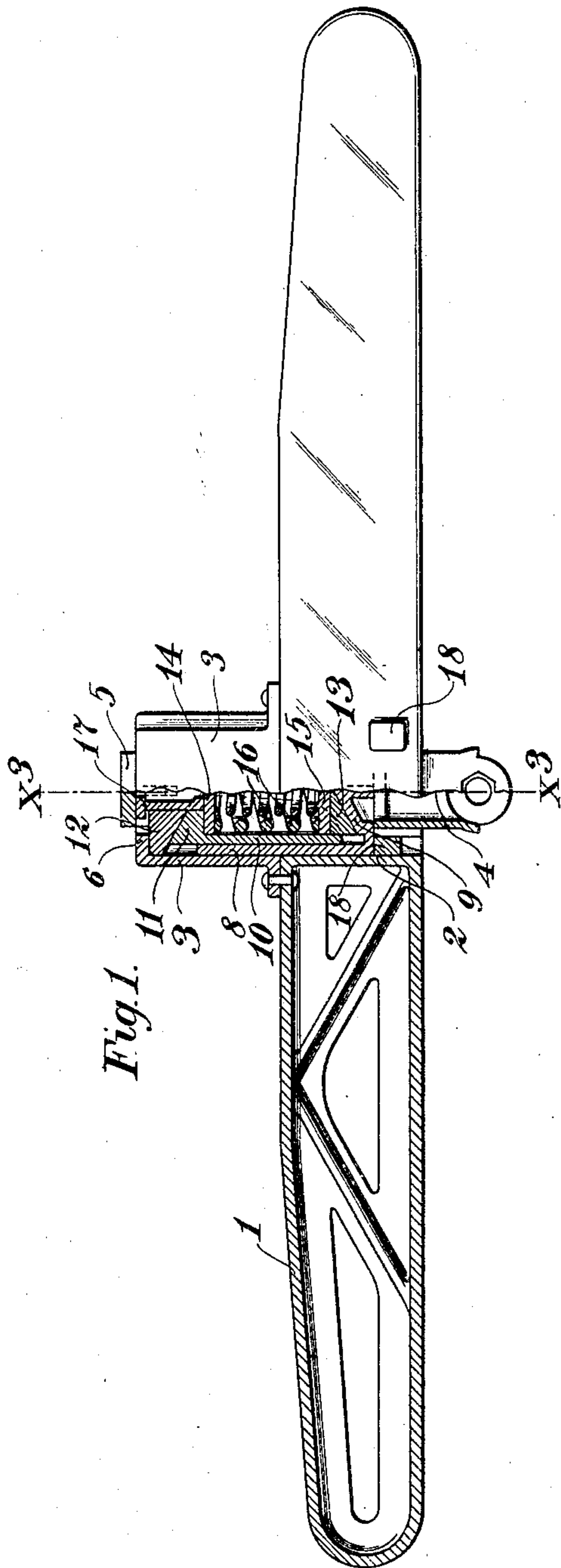


Fig. 1.

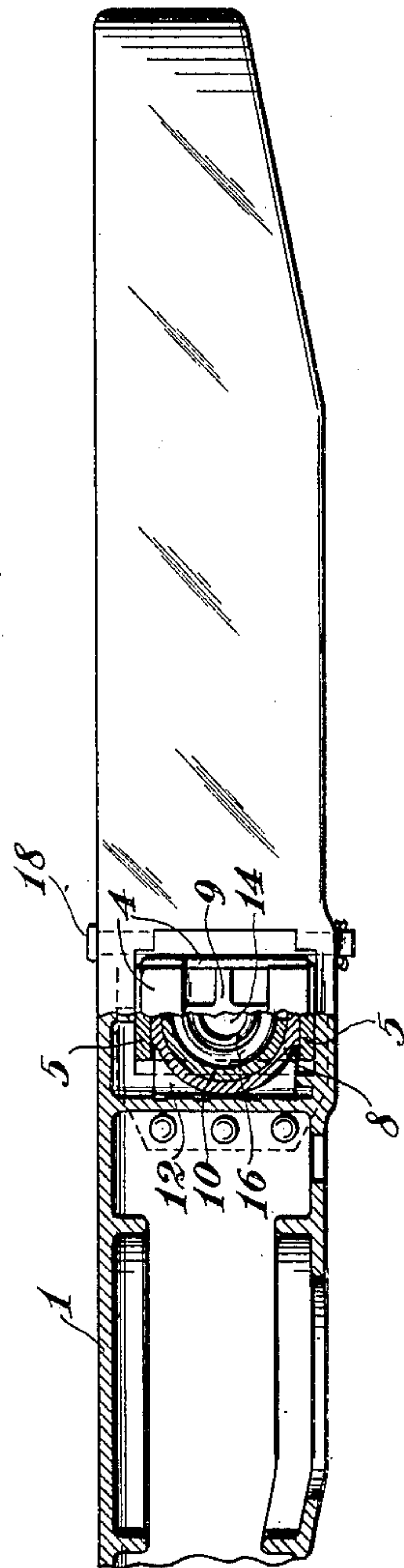


Fig. 2.

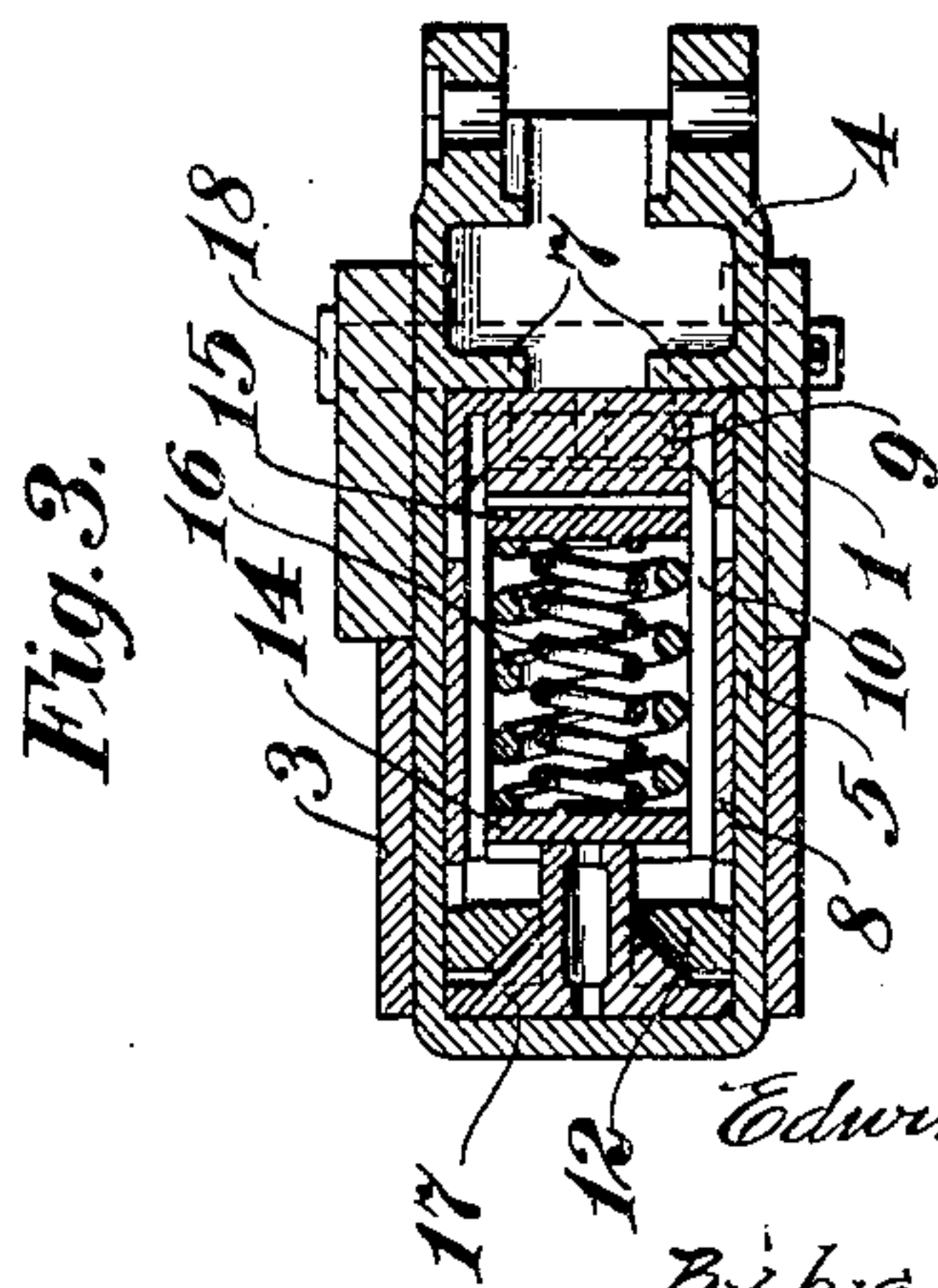


Fig. 3.

Witnesses:

L. L. Simpson.

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Inventor:

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By his Attorneys,

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# UNITED STATES PATENT OFFICE.

EDWIN C. WASHBURN, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR, BY MESNE ASSIGNMENTS,  
TO COMMONWEALTH STEEL COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF  
NEW JERSEY.

## BUMPER-BEAM DRAFT-RIGGING.

No. 930,248.

Specification of Letters Patent.

Patented Aug. 3, 1909.

Application filed August 12, 1907. Serial No. 382,106.

*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 present invention has for its object to improve that type of draft rigging wherein a coupler 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.

Certain of the features herein disclosed are disclosed and claimed in my companion application S. N. 388,104 filed of even date herewith and entitled "Bumper beam draft rigging".

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

Referring to the 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 draft bar seat 2 that extends transversely through the beam from front to rear thereof and is extended into a pocket 3 rigidly secured to the rear plate of the said beam.

The draft bar 4 works within the pocket 2 and the main body portion thereof is in the form of a yoke 5, the rear end of which is adapted to work through an opening in the extended end of the pocket 3. At the opposite sides of the yoke 5, the said extended end of the pocket 3 is formed with stop lugs or flanges 6, and a short distance inward from its forwardly projecting end said draft bar is provided with internal stop lugs 7.

Placed within the pocket 3 and within the yoke 5 is a friction barrel or cylinder 8, the

rear end of which is open and the front end of which is provided with a head 9 that is wedge-shaped or beveled in opposite directions from its central toward its side portions. Working frictionally within the barrel 8 is a split or two-part friction barrel or cylinder 10, the front end of which is open and the rear end of which is formed with reversely beveled wedge portions 11. Within the pocket 3, normally engaging the stop flanges 6 thereof, is a rectangular wedge block 12. The reversely beveled surfaces at the front face of this wedge block 12 engage one with each of the wedge portions 11 of the split barrel 10. The pocket 3, it will be noted, is rectangular in cross section. A pair of reversely beveled wedge blocks 13 engage the reversely beveled portions of the wedge shaped head 9. The outer edges of these wedge blocks 13 are semi-cylindrical and engage the concave surfaces of the sections of the split barrel 10. A follower 14 normally engages the shoulders of the wedge portions 11 of the split barrel 10, and a similar follower 15 normally engages the inner faces of the wedge blocks 13. A coiled cushioning spring 16 is compressed between the followers 14 and 15. A spacing hub 17 projects through an axial passage in the wedge block 12 and between the wedge portions 11 of the split barrel 10 and engages the follower 14 and the rear portion of the draft bar yoke 5.

A pair of heavy lock pins 18, shown as rectangular in cross section, are passed through suitable seats in the bumper beam 1 on opposite sides of the draft bar 4 and front end opening of the seat 2, in position for engagement with the front end head of the barrel 8. When these lock pins 18 are removed from the beam, the draft bar, together with the spring and friction device or spring damper, may be readily drawn out of the seat 2. When they are in working position they serve as abutments for transmitting draft strains from the draft bar to the bumper beam.

Under forward movements of the draft bar, produced by draft strains, the outer barrel 8 and its head 9 remain stationary and the yoke 5, wedge block 12, sectional inner barrel 10 and follower 14 are moved forward, as the spring is compressed. Under bumping strains, the draft bar 4, outer barrel 8, its head 9 and the follower 15 are moved rear-



ward, as the spring is compressed, and the reaction of the bumping force is transmitted through the wedge block 12 to the stop flanges 6 of the pocket 3. Under both bumping and draft strains, the cam blocks 13 are pressed laterally outward by the wedge shaped head 9 of the barrel 8, and the wedge portions 11 at the inner extremities of the split barrel 10 are pressed laterally outward by the wedge block 12, so that the sections of the split barrel 10 are forced into frictional engagement with the engaging walls of the outer barrel 8, under a pressure that is approximately proportional to the force of the bumping or draft strains. Hence, as the two friction barrels 8 and 10 always have a sliding movement, one with respect to the other, under bumping and draft strains, the frictional resistance afforded thereby augments or relieves the spring 16 to an extent approximately proportional to such bumping or draft strains.

What I claim is:

1. The combination with a bumper beam

having a draft bar seat at its central portion, a draft bar mounted in said seat, a connection between said bar and beam including a spring and cooperating frictional devices, and detachable draft pins mounted in said beam and passed through the forward extremities of said draft bar seat, one on each side of said draft bar and serving when in position to hold the said frictional devices and spring in operative position within said seat, substantially as described.

2. A draft mechanism comprising a body portion and a yielding draft connection thereto, including a draft bar and vertically removable keys serving as draft lug devices and normally holding said parts operatively connected.

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

EDWIN C. WASHBURN.

Witnesses:

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