F. W. BLECKLEY.

BOLSTER.

APPLICATION FILED JAN. 5, 1909.

946,834.

Patented Jan. 18, 1910.

2 SHEETS—SHEET 1.

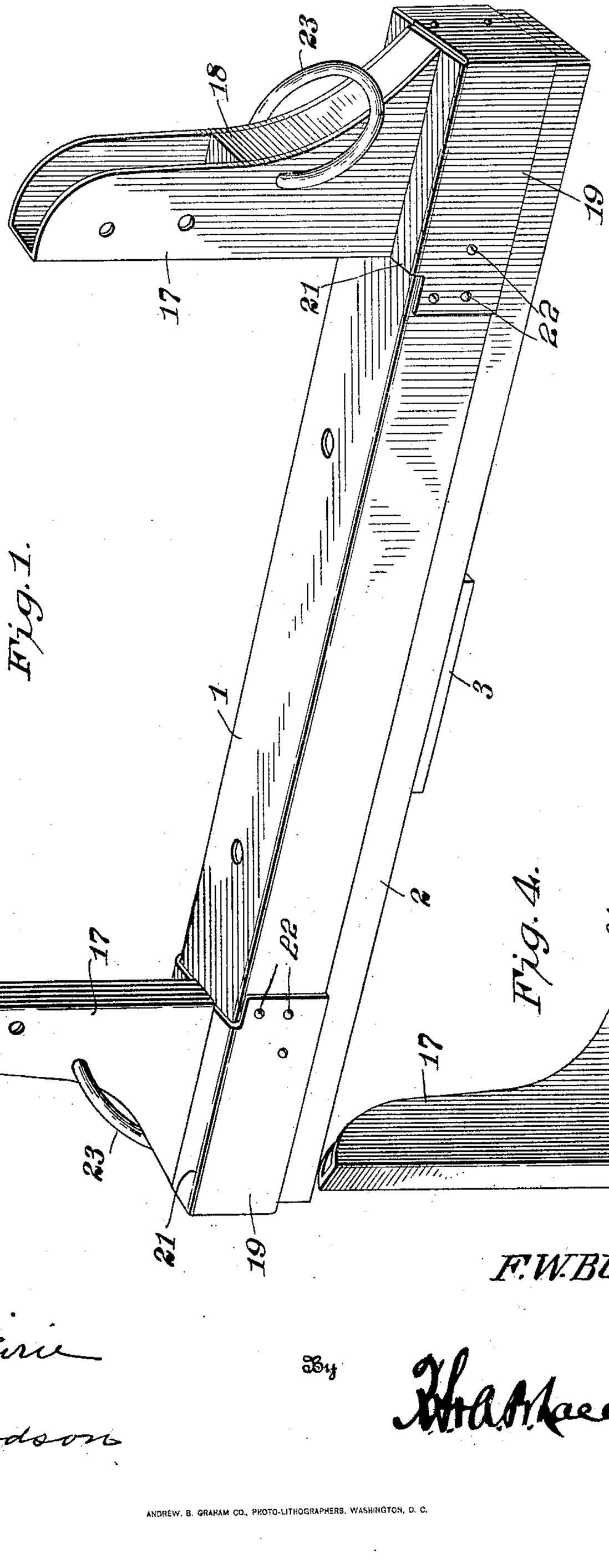

Fig. 1.

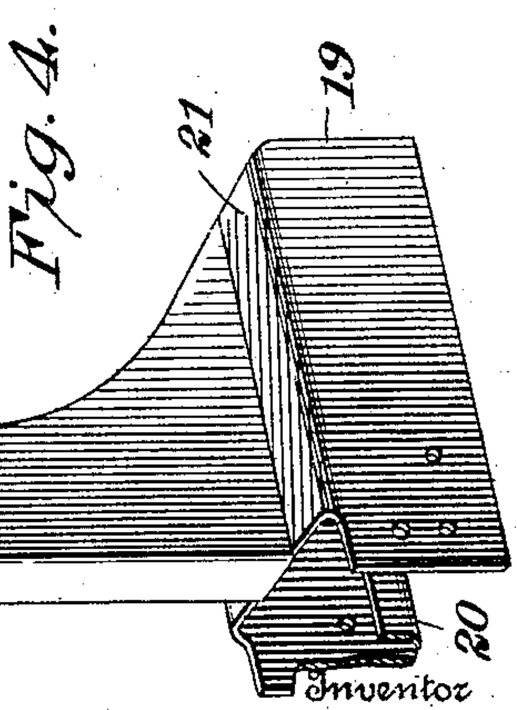

Fig. 4.

Witnesses

Jno Purcell

W. A. Woodson

Inventor

F. W. Bleckley,

By Wm. A. Macey. Attorney 5

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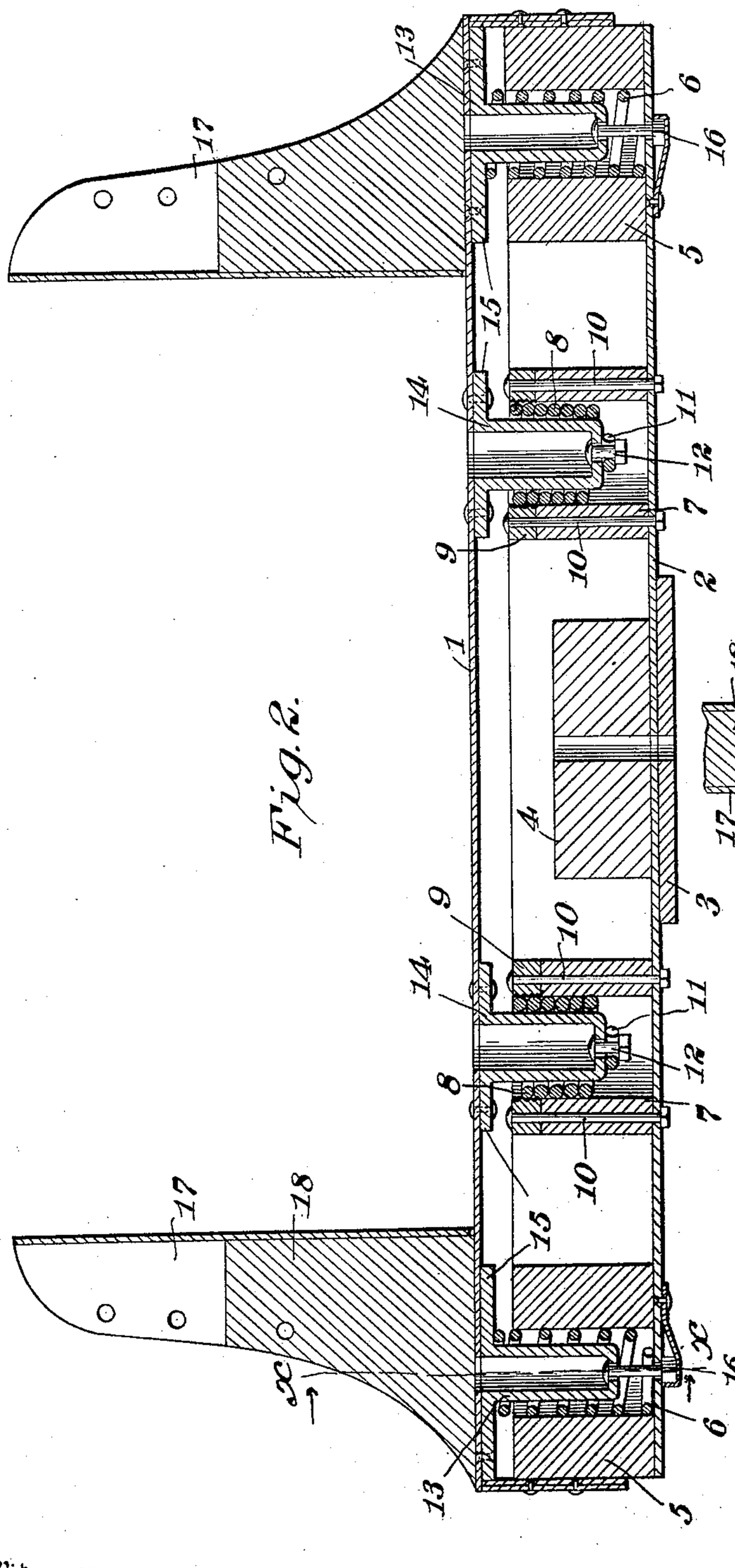

Fig. 2.

Fig. 3.

Witnesses

Jno Purcell

W. P. Woodson

Inventor

F. W. Bleckley,

By Wm. A. Race, Attorneys

UNITED STATES PATENT OFFICE.

FREDERICK W. BLECKLEY, OF HAZLETON, PENNSYLVANIA.

BOLSTER.

946,834. Specification of Letters Patent. Patented Jan. 18, 1910.

Application filed January 5, 1909. Serial No. 470,768.

To all whom it may concern:

Be it known that I, FREDERICK W. BLECKLEY, a citizen of the United States, residing at Hazleton, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Bolsters, of which the following is a specification.

It is the purpose of this invention to supply a bolster of the type comprising upper and lower members having interposed springs to relieve jar and shock alike both to the body and running gear.

This invention provides novel mountings for the springs, peculiar connections between the springs, mountings and bolster members, and guide means of unique construction arranged between the bolster members to direct them in their relative movements when neutralizing vibration, jolt and strain, the parts being so disposed as to prevent a too free play of the upper bolster member, but sufficient to overcome the stress and jar incident to the movement of vehicles over rocky roads.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the results reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view of a bolster embodying the invention; Fig. 2 is a vertical central longitudinal section of the bolster; Fig. 3 is a transverse section of the upper member of the bolster on the line *x*—*x* of Fig. 2 looking in the direction of the arrow; Fig. 4 is a perspective view of the standard.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The bolster comprises an upper member 1 and a lower member 2, each of the members being formed of channel iron and arranged with their open sides facing each other, the side members or flanges of the upper member embracing the side members of the lower member, the two members being of such relative proportions as to admit of the upper member moving freely upon the lower member vertically to compensate for vibration and shock. A wear plate 3 is fitted to the under side of the lower member 2 and is vertically apertured to receive a king bolt or other fastening. A block 4 is located within the lower member 2 at a central point and is preferably of wood apertured vertically in line with the opening formed in the wear plate 3 to receive the fastening. A block 5 is secured within each end of the lower member and is provided with a vertical opening in which an expansion spring 6 is fitted. Other blocks 7 are located within the member 2 at points between the block 4 and the end blocks 5 and are formed with vertical openings in which contractile springs 8 are fitted. The several blocks 4, 5 and 7 are preferably of wood. Metal cap plates 9 are placed upon the blocks 7 and are formed with openings to register with the openings in said blocks, the openings formed in the metal cap plates being internally threaded to make screw thread connection with the upper ends of the contractile springs 8. Bolts or fastenings 10 connect the cap plates 9 to the block 7 and in turn secure the blocks to the lower bolster member 2. The lower ends of the contractile springs are bent inward and terminate in eyes 11 which receive the lower ends of bolts or fastenings 12 by means of which the springs 8 are connected to the guide members coöperating with the blocks 7.

The upper bolster member 1 is provided with guide members 13 and 14 which are of similar formation and are adapted to coöperate with the blocks 5 and 7. The end guide members 13 enter the expansion springs 6, whereas the guide members 14 enter the contractile springs 8. The guide members 13 and 14 are flanged at their upper ends, as indicated at 15, and said flanges are secured in any manner to the under side of the top portion of the member 1. The guide members 13 and 14 are hollow and formed with openings at their lower ends to receive the fastenings by means of which they are connected to the coöperating parts. The bolts or fastenings 12 pass through the guide members 14 and through the eyes 11 of the contractile springs 8.

Bolts or fastenings 16 are fitted in the end guide members 13 and make connection with the lower member 2, the upper ends having play within said guide members corresponding to the vertical movement of the upper member 1. The bolts or fastenings 12 and 16 serve to hold the members 1 and 2 together without interfering in any manner with the predetermined play which is controlled by the bolts 16.

A standard 17 is fitted to each end of the

upper bolster member 1 and moves therewith and this standard is formed with a lower portion which embraces opposite sides and the outer end of the member 1, the several parts of the standard being formed of a single blank, which is bent into the shape substantially as illustrated. The standard 17 is of U-form in horizontal section and its lower portion is tapered and reinforced by means of a wooden block 18 which fills the space formed between the front and side walls comprising said standard. The lower portion 19 is of box form and slips upon the end portion of the member 1. The sides of the lower portion 19 have their lower edge portions inwardly folded, as indicated at 20 to embrace the lower edge portions of the flanges or side members of the part 1 thereby preventing vertical displacement of the standard when the latter is in place upon the member 1. The outer end or wall of the lower portion 19 of the standard closes the open end of the member 1 and is formed by parts of the blank having edge portions overlapped and secured by rivets or in any other convenient and substantial way. The standard is narrower than the lower box member 19, hence is connected at its foot with the side walls of the part 19 by portions 21, which overhang the top portion of the member 1 and act in conjunction with the lower folded edge portions 20 to prevent vertical movement of the standard when slipped endwise upon the member 1. The standards may be moved to any position upon the upper member 1 according to the width of the vehicle body to be placed between the standards, and after the latter have been adjusted to the required position they are made secure by suitable fastenings 22 which pass through the side walls of the box portion 19 of the standard and the flanges or side members of the upper bolster part 1. A boom ring 23 is fitted in openings formed in the side walls of the standards and in the reinforcing blocks 18.

It has been discovered that while the contractile springs 8 admit of the upper bolster member 1 having ample play to neutralize shock and vibration they nevertheless prevent a too free rebounding movement which has been found to be entirely objectionable, since such motion is unsteady. The contractile springs while yielding to vertical jar or vibration, so as to compensate for the same, quickly assume a normal position without producing the objectionable rebounding action incident to the use of expansion springs solely. By using expansion and contractile springs the combined effect of both is had, hence the results are superior to those obtained by the use of either form of spring alone.

Having thus described the invention what is claimed as new is:

1. A bolster comprising elongated telescopic members having inter-engaging side flanges, contractile springs attached to one of the bolster members, guide members attached to the other bolster member and arranged to operate in said contractile springs and cooperating therewith to sustain the load imposed upon the upper bolster member and to neutralize shock and vibration.

2. In combination relatively movable elongated bolster members, blocks secured to one of said members and provided with openings, contractile springs housed within the openings of the blocks and secured at one end thereto, guide members attached to the other bolster member and operating within the contractile springs and within the openings of said blocks.

3. In combination relatively movable bolster members, fibrous blocks secured to one of the bolster members and provided with openings, cap plates fitted to said blocks and having openings to register with the openings thereof, contractile springs fitted within the openings of the respective blocks and attached at one end to the cap plates thereof, and guide members attached to the other bolster member and operating within the openings of the blocks and within said contractile springs.

4. In combination relatively movable elongated bolster members spaced blocks secured to one of the bolster members and forming closures for the opposite ends thereof, guide members carried by the other bolster member and operating in openings in said blocks, expansion springs interposed between end portions of the bolster members, contractile springs arranged between the intermediate portions of the bolster members, and coöperating limiting means between the two bolster members.

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

FREDERICK W. BLECKLEY. [L. S.]

Witnesses:
JOHN WILHELM,
EDWIN C. CORSON.