No. 624,276. Patented May 2, 1899.

J. C. WANDS.

BOLSTER.

(Application filed Mar. 21, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

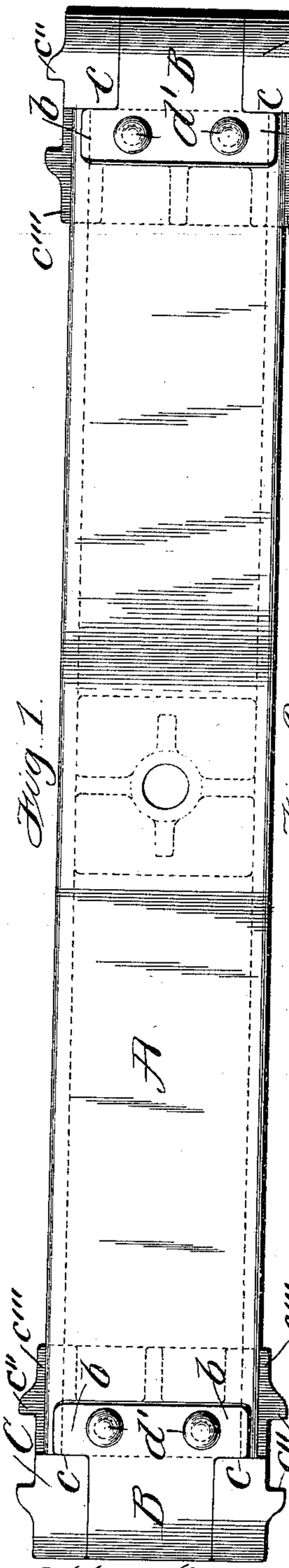

Fig. 2.

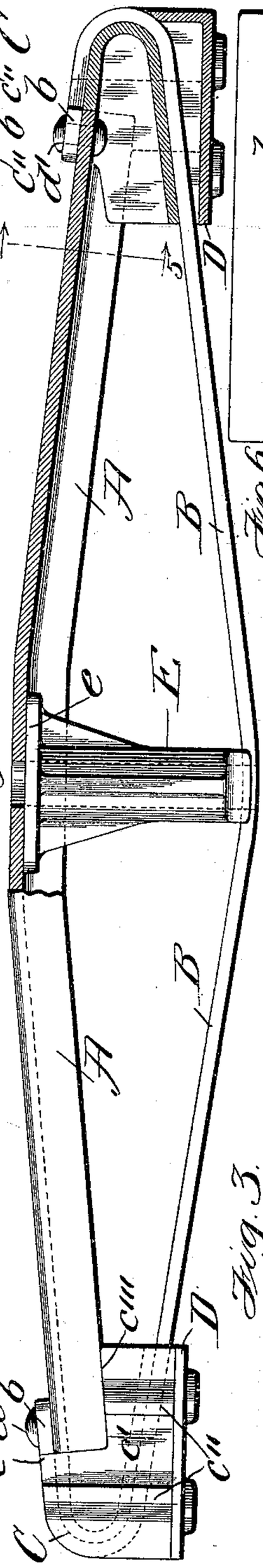

Fig. 6.

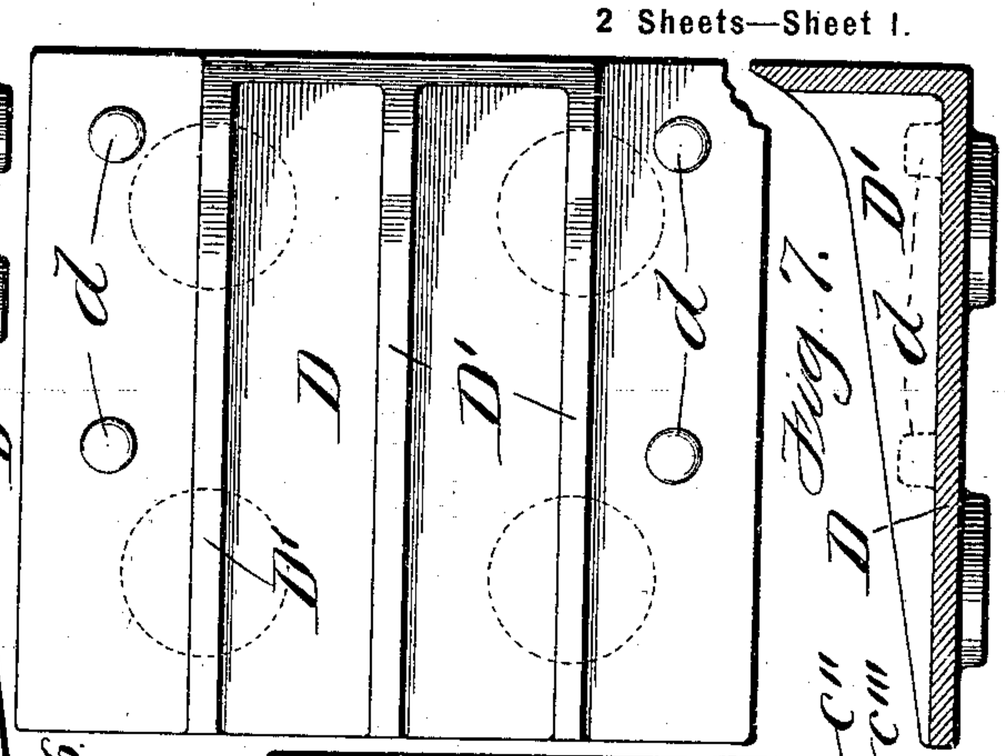

Fig. 4.

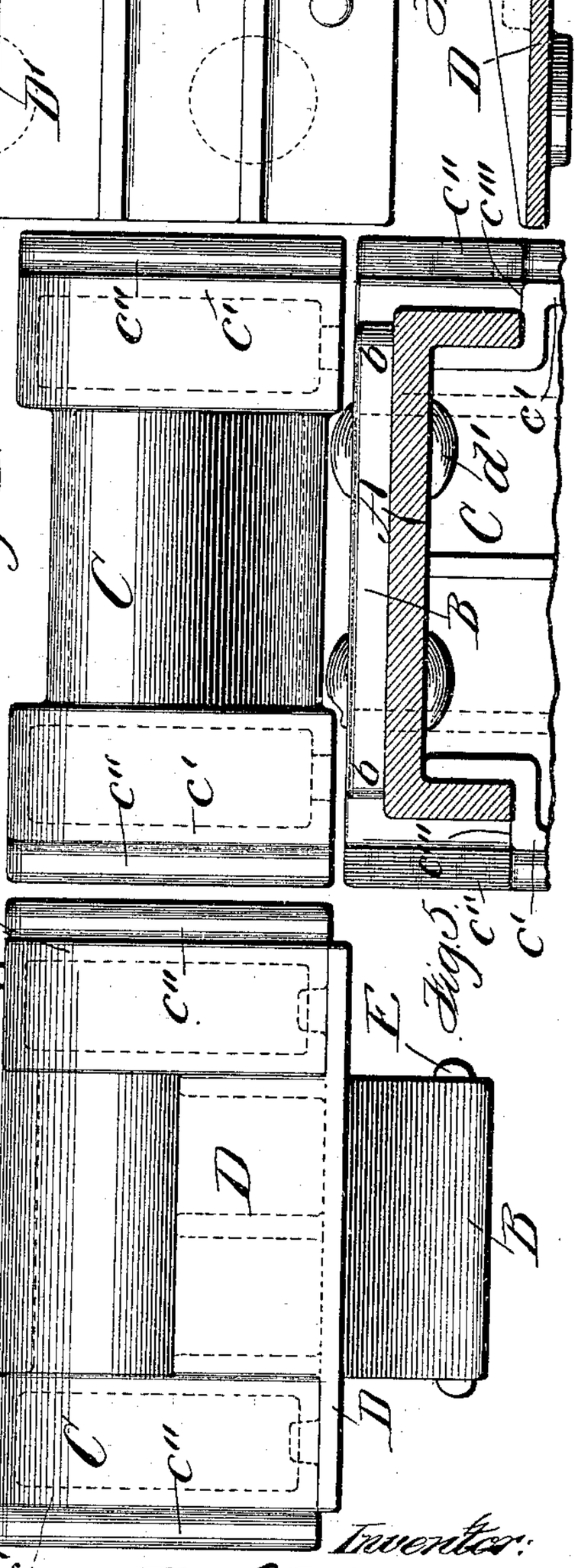

Fig. 3.

Fig. 5.

Fig. 7.

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Fig. 8.

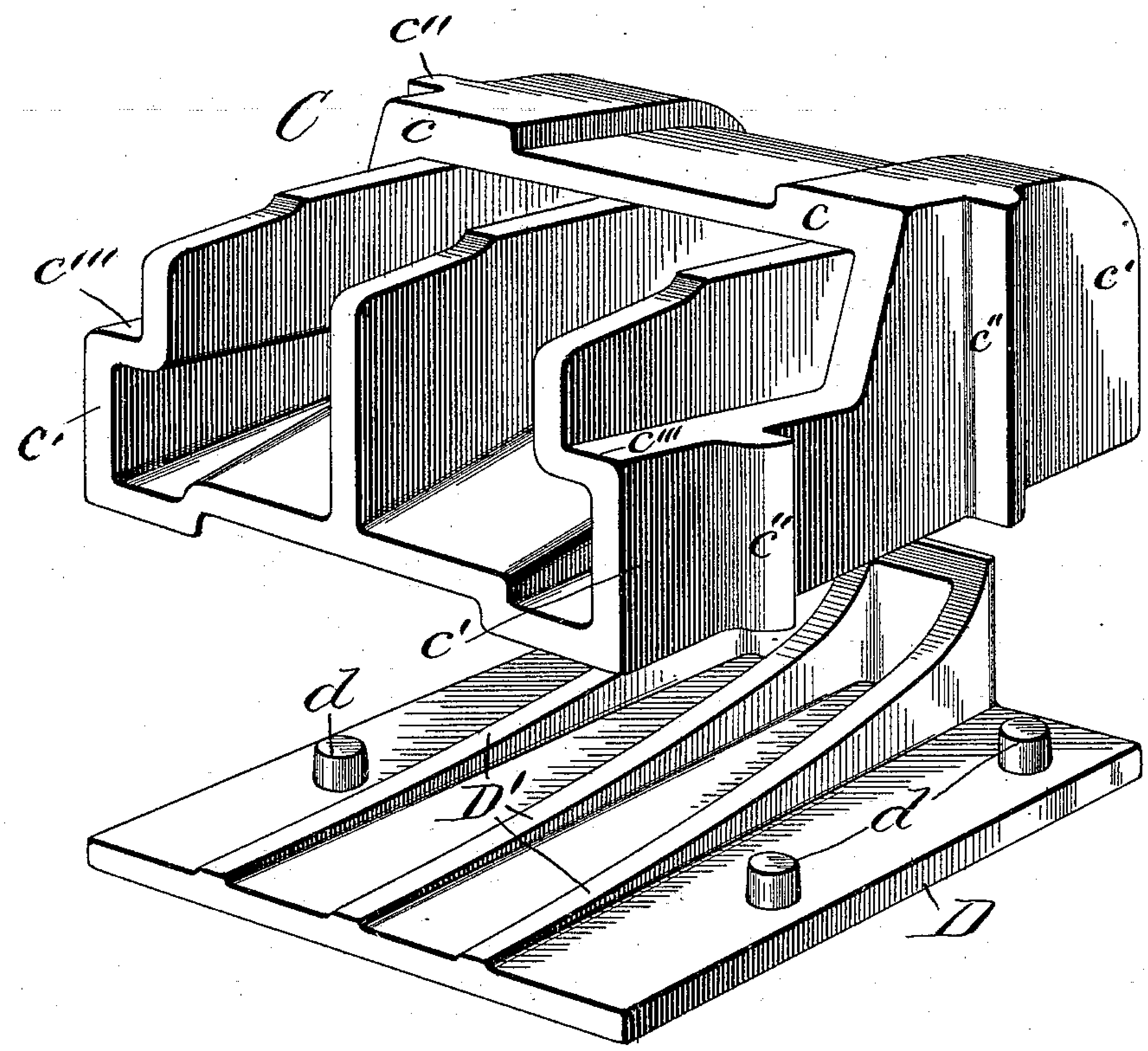
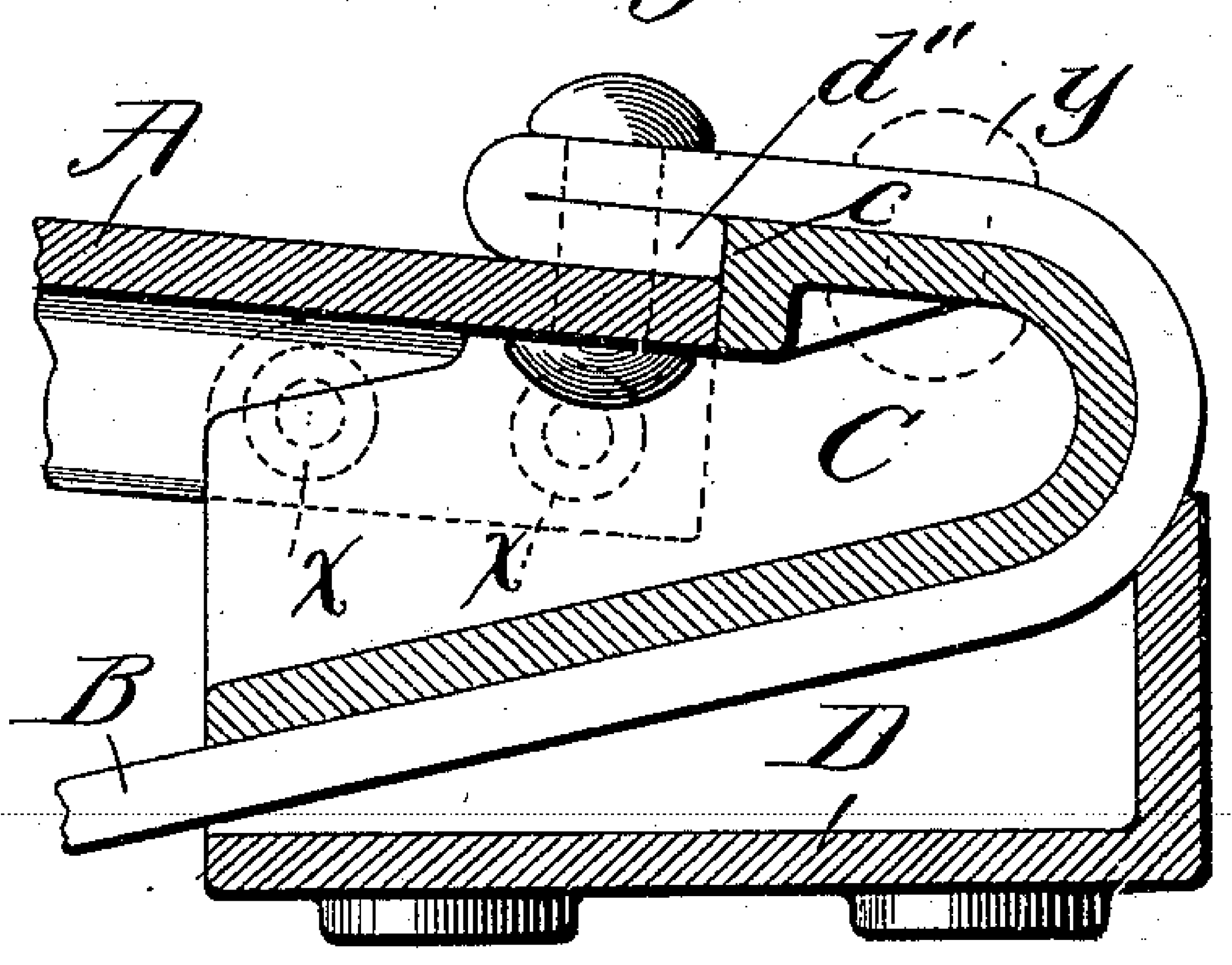


Fig. 9.



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UNITED STATES PATENT OFFICE.

JOHN C. WANDS, OF ST. LOUIS, MISSOURI.

BOLSTER.

SPECIFICATION forming part of Letters Patent No. 624,276, dated May 2, 1899.

Application filed March 21, 1898. Serial No. 674,611. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. WANDS, 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 Bolsters, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view of my improved bolster. Fig. 2 is a side elevational view, partly in section, of the same. Fig. 3 is an enlarged elevational view. Fig. 4 is an end elevational view of the end casting. Fig. 5 is a cross-sectional view through the compression member of said block. Fig. 6 is a top plan view of the spring-seat. Fig. 7 is a cross-sectional view through said spring-seat. Fig. 8 is a detail view of the head-block and spring-seat as seen from the inside; and Fig. 9 is a sectional view through one end of the bolster, showing a modified form.

This invention relates to a new and useful improvement in bolsters for car-trucks, the object being to construct a bolster of the character described in such manner that ordinary channel-iron may be employed for the compression member, the tension member being of the material known as "flitch" bar iron or steel. Castings are also preferably employed to take up the end thrust of the compression member and afford means of attachment with the tension member without subjecting said tension member to abrupt curves. While I have mentioned these materials as being preferable, it is obvious that others could as well be used.

By the use of commercial rolled forms as the principal members of my improved bolster and the manner in which said forms are assembled I am able to produce a truck-bolster which under strains will resist deflection to a high degree, while at the same time it is lighter in weight and less expensive to manufacture for the load it carries than any other bolster on the market with which I am familiar.

The special features of this invention reside in the combination with a compression member whose end thrusts are taken up by head-blocks against which they abut, the tension member being bent around said head-blocks and secured to the ends of the compression member, a suitable king-post being employed to separate said two members and form what is known as a "strut." The compression member is preferably cambered to give it strength and in cross-section is of the form of an inverted rolled channel-beam, while the tension member is what is known as "flitch" bar iron or steel.

In the drawings, A indicates the compression member, which is preferably a rolled channel-beam, cambered as shown in Fig. 2.

B indicates the tension member, which is preferably made of rolled iron or steel, commercially known as "flitch" bar. This tension member is formed at its ends with lateral shoulders *b*, as shown in Figs. 1 and 2, which shoulders are designed to rest against shoulders *c* of the head casting or block C. This block C is shown more clearly in Figs. 2 and 8, and consists of parallel side walls *c'*, which are provided with vertical ribs *c''* on their outer faces, which ribs act as column-guides. These side walls, at their inner ends, are set in, forming shoulders *c'''*, which shoulders support the depending flanges of the channeled compression member. The top and bottom walls of the casting C are formed with seats for the tension member, which seats are connected at the outer ends of the casting by a rounded or curved portion, so that when the tension member is in position there will be no abrupt curves or sharp corners to lessen its tensile strength. Interior strengthening-ribs are provided for the casting in any suitable manner. When the compression member is in position, its ends fit snugly against these blocks, being flush with the groove or seat for the tension member, but leaving the shoulder *c* projecting above the ends of the compression member, against which the T-head of the tension member abuts.

D indicates the spring-seats, whose construction is more clearly shown in Figs. 2, 6, 7, and 8. The spring-seats are provided with dowels *d*, entering correspondingly-positioned openings or recesses in the lower face of block C, while ribs D' rise from the middle portion of said spring-seat and rest against the tension member B.

E indicates the king-post or strut, which is preferably formed hollow for the passage of the king-bolt, said strut being provided with lateral flanges *e* to afford an extended bearing for the compression member, while the lower end is formed as a pocket or seat for the tension member. Suitable webs may be employed to strengthen this strut, as is obvious.

In assembling the different parts the strut is placed in position and the tension member bent over the blocks at the ends of the bolster, after which suitable rivets or other securing devices *d'* are introduced through the ends of the tension and compression members to hold said parts together. The spring-seats are then placed in position and the bolts introduced between the column-guides of the truck. The exertion of the springs bearing against the under faces of the spring-seats will hold the same in position, aided by the weight of the car on the bolster.

In Fig. 9 I have shown a sectional view through one end of my improved bolster, showing a slightly-modified form of attachment of the tension member, in which instead of forming a T-head on said tension member I bend one end, as at *d''*, under, which end rests against a shoulder on block C. Rivets are provided for holding the parts together, as before described.

While I have shown the ends of the tension member as being secured to the ends of the compression member, the two members holding the block in position between them, it is obvious that means could be employed for securing the compression member to the block and the tension member to said block, thus dispensing with the attachment between the compression and tension members direct. Such separate attaching devices for the compression and tension members to the block are illustrated by dotted lines in Fig. 9, in which *x* represents rivets for securing the compression member to the block, and *y* represents a rivet for securing the tension member to said block.

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

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

1. The combination with a commercially-made compression member of channel-beam form, of a tension member bent at its ends to engage the ends of the channel-beam compression member, and a strut; substantially as described.

2. The combination with a commercially-made compression member of channel-beam form, of a flitch-bar or flat-plate tension member bent up at its ends over the web of the channel-beam compression member, a strut, head-blocks fitting on the ends of the compression member, and column-guides formed on said head-blocks; substantially as described.

3. In a car-truck bolster, the combination with a compression member of channel-beam form, of a flitch-bar tension member, and head-blocks formed with seats for the compression member and around which the ends of the tension member are bent, said ends being secured firmly in position at a point above the head-blocks; substantially as described.

4. In a car-truck bolster, the combination with a compression member, of a tension member, head-blocks which receive the ends of said compression member, said head-blocks being extended beyond said compression member, and formed with seats for the tension member, which tension member is bent around said head-blocks and is shouldered against the inner upper edges of said head-blocks; substantially as described.

5. In a car-truck bolster, the combination with a compression member, of a tension member, head-blocks, which receive the ends of the compression member, said head-blocks being extended outwardly some distance beyond said compression member, and formed with grooved seats for the tension member, means for securing said tension member to the compression member, said tension member also being shouldered against the inner upper edges of the head-blocks, and column-guides on said head-blocks; substantially as described.

6. In a car-truck bolster, the combination with a compression member, of a tension member, head-blocks which receive the ends of said compression member, said head-blocks being extended beyond said compression member and formed with seats for the tension member, means for securing said tension member to the compression member, column-guides formed on said head-blocks, and spring-plates; substantially as described.

7. In a car-truck bolster, the combination with a compression member, of a tension member, and head-blocks which are formed to receive the ends of the compression member, and, also, afford abutments for the ends of the tension member, said tension member being formed at its ends to engage said head-blocks, and pull outwardly thereagainst when under tension, the tension member below the head-blocks being unattached to the head-blocks and free to move; substantially as described.

8. In a car-truck bolster, the combination with a compression member, of head-blocks arranged at each end thereof, a tension member which is bent around said head-blocks, and over said compression member, and securing devices for the attachment of the extreme ends of said tension member to said compression member, whereby said tension

member is free to stretch its entire length between the ends of the bolster and around the head-blocks substantially as described.

9. The combination with the compression member of head-blocks arranged at the ends thereof, and which extend outwardly beyond said compression member, a tension member whose ends are bent around said head-blocks, and thence extend inwardly and overlap the ends of the compression member, and rivets for securing the ends of the tension and compression members together; substantially as described.

10. The combination with the compression member of head-blocks arranged at the ends thereof, and which extend outwardly beyond said compression member, a tension member whose ends are bent around said head-blocks, and thence extend inwardly and overlap the ends of the compression member, at which point the ends of the tension member are folded under, as at *d''*, to engage shoulders *c* of the head-blocks, and rivets for securing the ends of the tension and compression members together; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 16th day of March, 1898.

JOHN C. WANDS.

Witnesses:
F. R. CORNWALL,
HUGH K. WAGNER.