

No. 620,269.

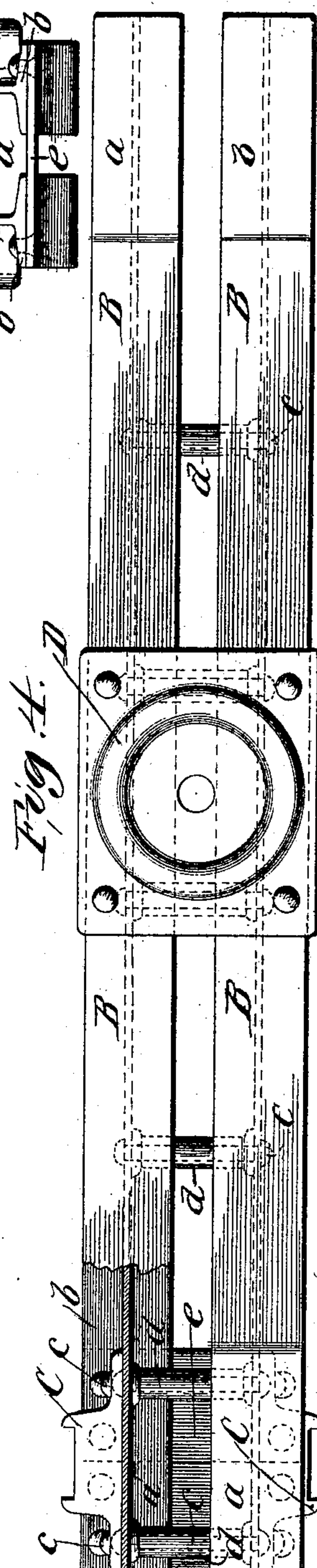
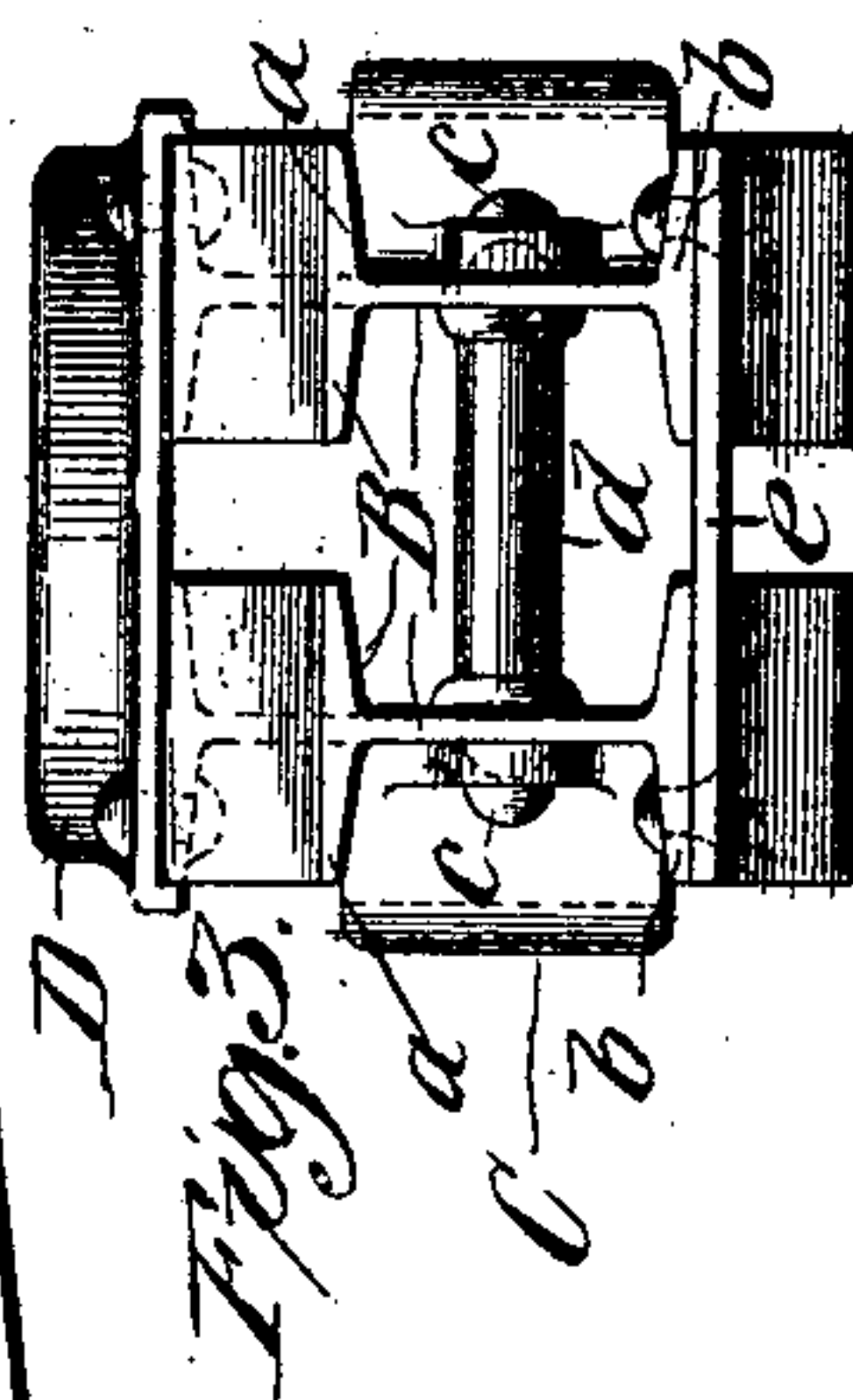
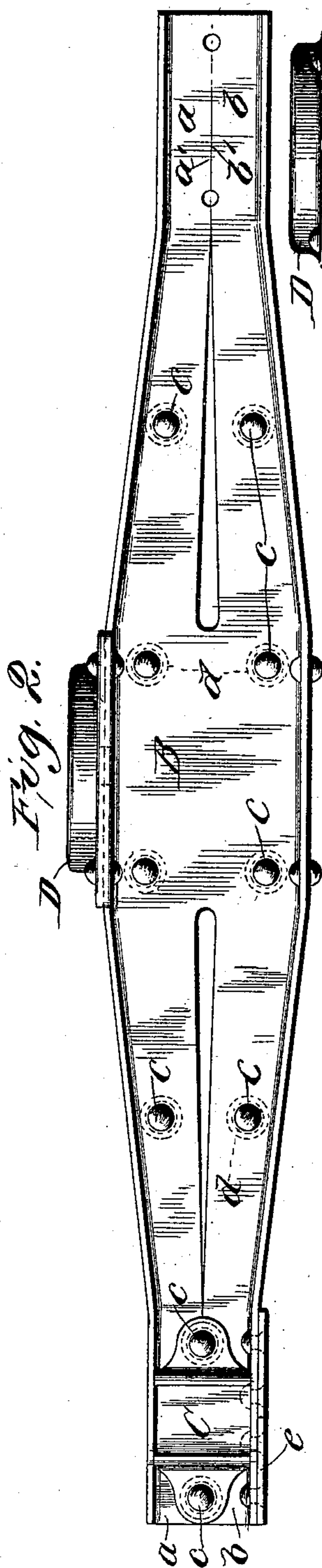
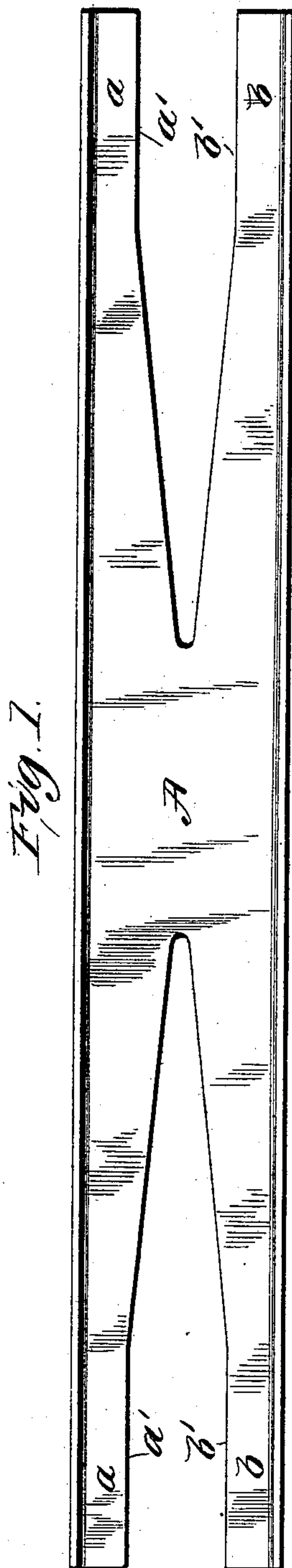
Patented Feb. 28, 1899.

W. P. BETTENDORF.
BODY AND CAR TRUCK BOLSTER.

(Application filed Dec. 2, 1896.)

(No Model.)

2 Sheets—Sheet 1.



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2 Sheets—Sheet 2.

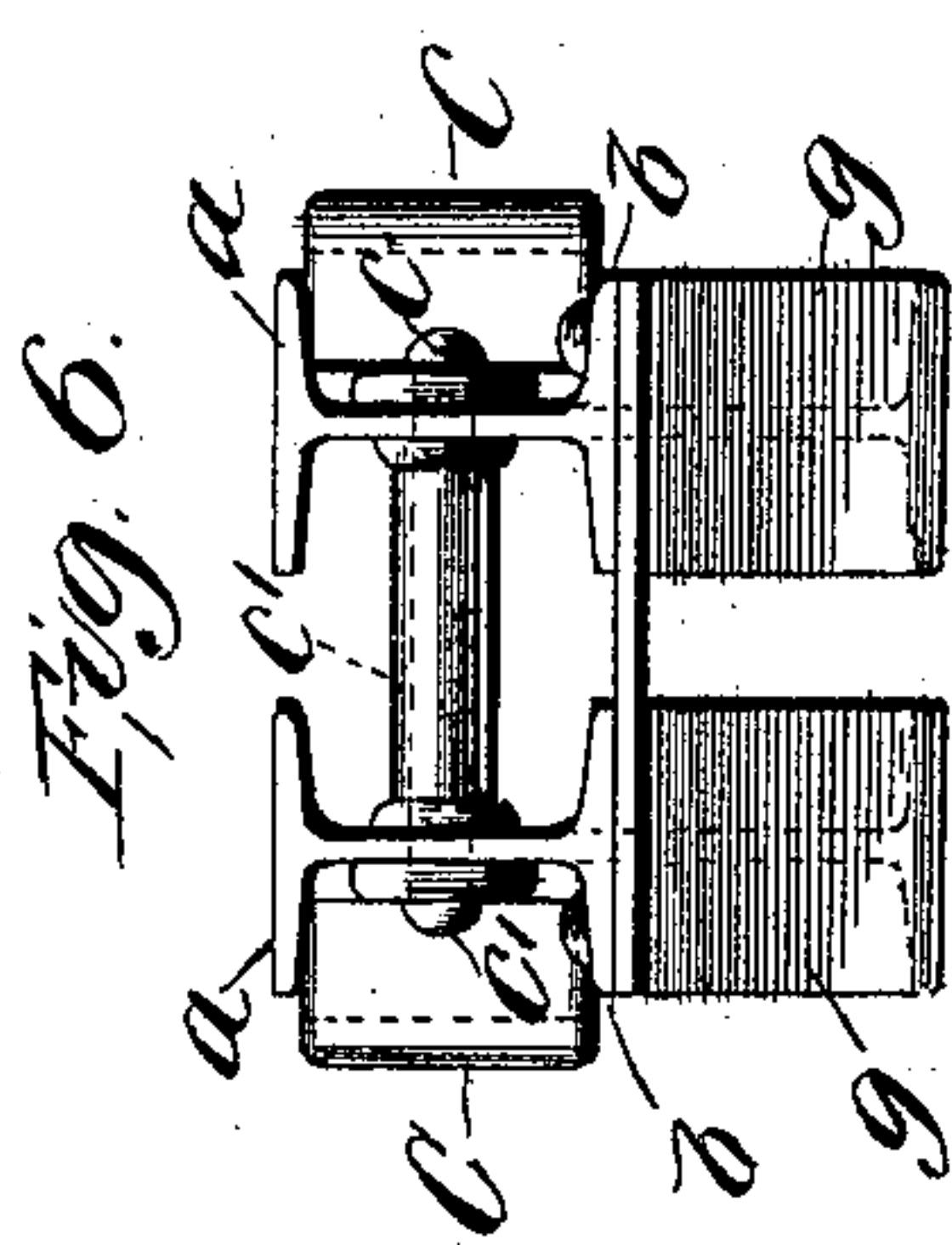


Fig. 8.

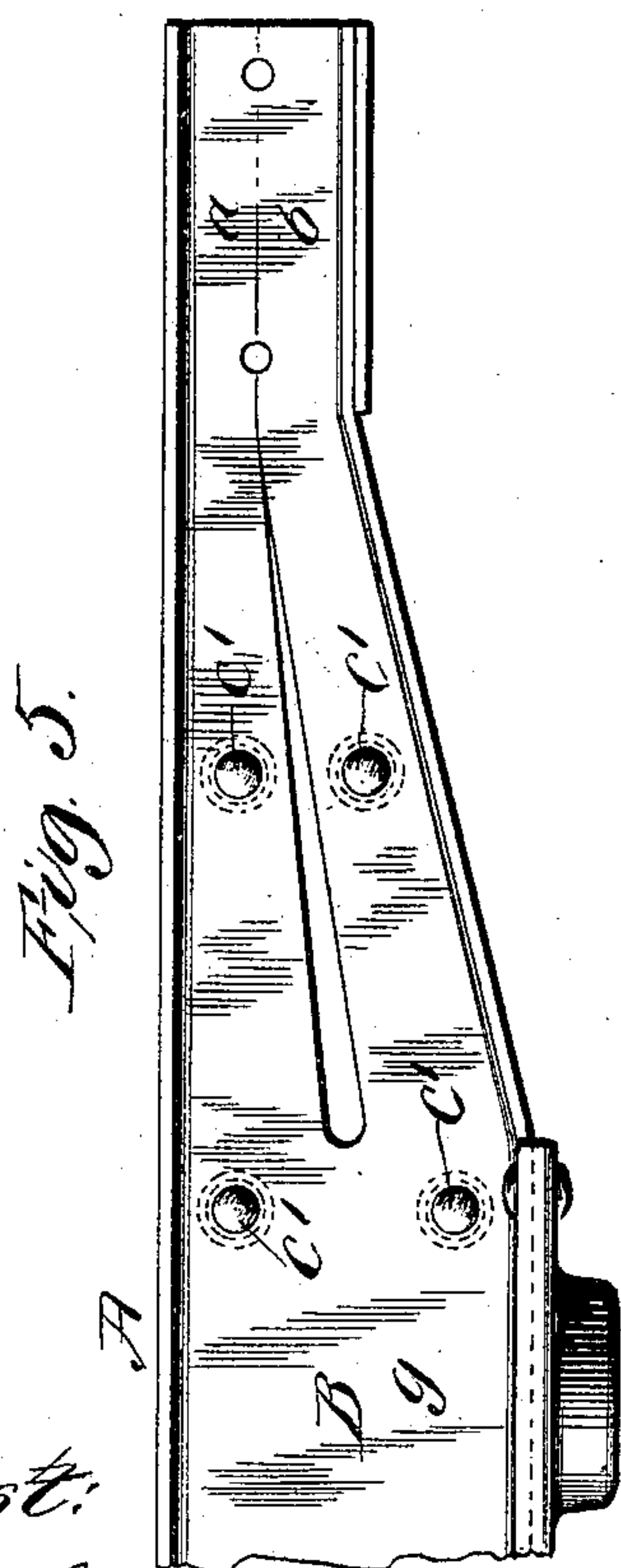
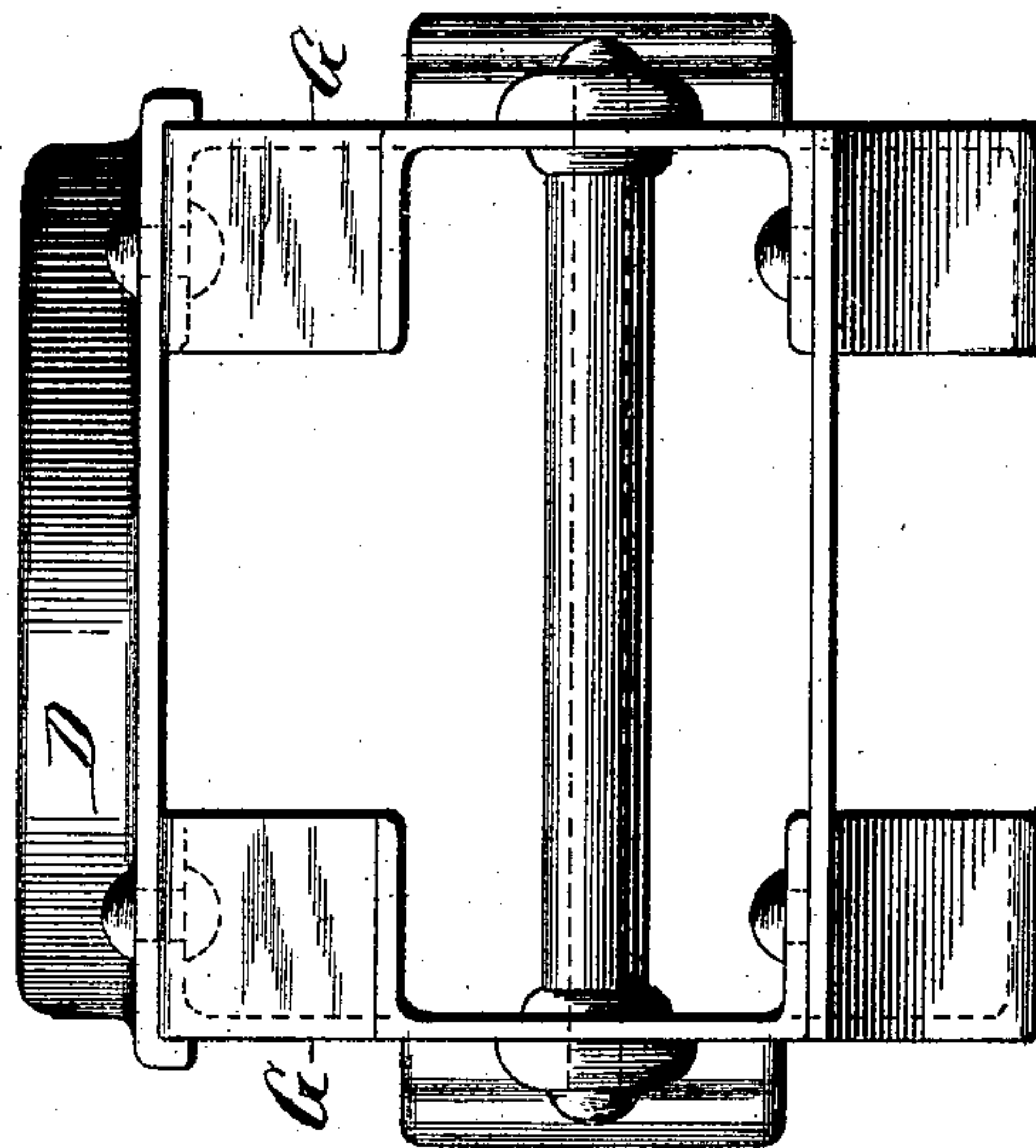
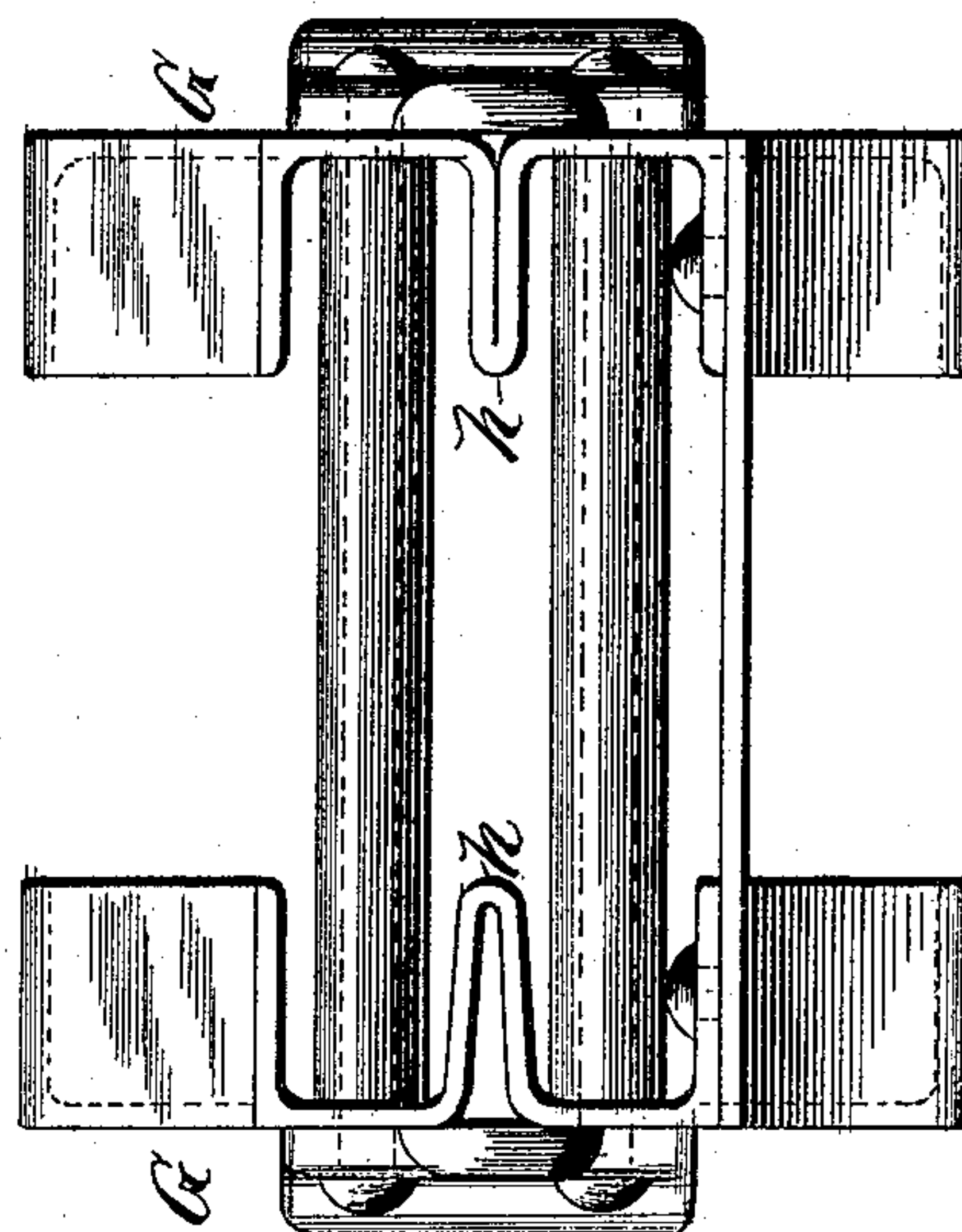


Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM P. BETTENDORF, OF DAVENPORT, IOWA.

BODY AND CAR-TRUCK BOLSTER.

SPECIFICATION forming part of Letters Patent No. 620,269, dated February 28, 1899.

Application filed December 2, 1896. Serial No. 614,159. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. BETTENDORF, a citizen of the United States, and a resident of Davenport, Scott county, Iowa, have
5 invented certain new and useful Improvements in Body and Car-Truck Bolsters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings and to the letters of reference marked thereon.

My invention relates to body and truck bolsters for cars; and its object is to utilize commercial forms of I or channel beams and embody therein the advantages of a truss formation, thereby combining simplicity and
15 cheapness of construction and a maximum of strength and minimum of weight in the most important feature of modern car construction. This I accomplish by reducing in an economical and simple manner the I or channel beam
20 to a truss formation, substantially as herein-after fully described and as illustrated in the drawings, in which—

Figure 1 is a side view of a blank I-beam
25 from which my invention is made. Fig. 2 is a side view of a truck-bolster made according to my invention. Fig. 3 is an end edge view of the same. Fig. 4 is a plan view thereof. Fig. 5 is a side view of one end of a car-body
30 bolster made according to my invention. Fig. 6 is an end edge view of the same; and Figs. 7 and 8 are details showing, respectively, an end view of a channel-beam embodying my improvements and an end view of a modification thereof.

In the drawings, A represents a blank made of a section of I-beam of suitable proportions and having a V-shaped piece of metal cut longitudinally out of its web at each end, so
40 as to bifurcate the same and leave two arms or bifurcations *a* and *b* at each end. The depth of this incision in the ends of the web of the blank A depends upon what length it is intended the central body portion of the
45 beam shall have and what the angles of the end portions shall be. In the drawings these incisions are shown to be a little greater than two-fifths of the entire length of the beam and of such shape as to leave the bifurca-

tions long and with the longitudinal edges of
50 their end portions *a'* and *b'* (corresponding to about one-third their length) parallel.

In order to convert the blank A into a side truss B of the bolster, as shown in Fig. 2 of the drawings, I press the bifurcations *a* and
55 *b* at each end of the same together until the edges of the end portions *a'* and *b'* bear flat against each other, whereupon I make them
60 integrant by welding or otherwise. Two of these trusses B are required in the construction of the bolster and are arranged parallel
65 their entire length and are held or secured together at a given distance apart by the use of tie-bolts *c*, which pass through suitable
65 openings in said trusses and through spacing-sleeves *d*, located between said trusses, and have their ends swaged, as shown. The bolts
70 *c* passing through the end portions of the trusses are made slightly longer than those passing through the body of the bolster and
70 are utilized to keep the column guide-block C C in place by passing through openings
75 made therefor in the side flanges of said blocks. These guide-blocks are located between the flanges of the ends of the trusses
75 and immediately over the spring-plates *e e*, which latter are riveted or otherwise secured to the under side of the flanges of the trusses,
as shown.

At the center of length of the bolster, as
80 shown in Fig. 2, the trusses have secured to the upper surfaces of their upper flanges the female bearing-plate D by means of rivets or in any other suitable manner. This plate
85 being of the usual construction well known to the art of car-building does not require further description.

In Fig. 5 I show a body-bolster for cars. In making this the same-shaped I-beam
90 blanks A are used as in making the truck-bolster; but instead of moving the bifurcations of the blank equally toward each other I move the lower bifurcations *b* up to the upper
95 bifurcations *a*, and thus keep the upper edges of the trusses and bolster made thereby perfectly straight from end to end, as shown. The trusses *g g* thus made are united by bolt
c' and with spacing-sleeves between them in

the same manner that the trusses composing the truck-bolster are; but their ends are preferably reinforced and connected by some medium placed between them, and at their centers of length they have secured to the under surfaces of their lower flanges the male bearing-plate E.

It will of course be understood that channel-beams can be used for the purposes of my invention just as well as I-beams. In Fig. 7 I show a channel-beam formed into a truss G in the manner hereinbefore described, and in Fig. 8 I show a modified form of truss—that is, instead of bifurcating the ends of the beam I upset the same by stamping a graduated fold h in the web, commencing at a point that would indicate the end of the incision, were I bifurcating the beam, and gradually increasing the depth of the fold as it approaches the end of the same. This manner of upsetting the ends of the beam to get the desired truss formation can be utilized just as well with I-beams as with channel-beams; but it is more expensive, and the additional strength to the truss is for many purposes offset by its increase in weight.

What I claim as new is—

1. A bolster for cars consisting of one or more trusses each of which is made of flanged beams originally of substantially the same height throughout their entire length, a portion of the web of which near each end is removed from its normal plane and the flanges of said beams bent toward each other so as to gradually lessen the height of the beam as

said flanges approach the ends, and a bearing-plate secured to the same.

2. A bolster for cars consisting of one or more trusses each of which is made of sections of flanged beams, the ends of which are bifurcated by cutting away a suitably shaped portion of the web thereof and have said bifurcations brought together, edge to edge, and made integrant, and a bearing-plate secured to the same.

3. A bolster for cars consisting of one or more trusses each of which is made of sections of flanged beams, the ends of which are bifurcated by cutting a wedge or V shaped piece from the web thereof, said bifurcations being equally moved until their edges meet and then made integrant, a bearing-plate secured to the center of length thereof, and column guide-blocks secured to the ends of the same.

4. A bolster for cars consisting of two parallel trusses, each consisting of corresponding sections of flanged beams the ends of which are correspondingly bifurcated by cutting out suitably shaped portions of the web thereof, then bringing the edges of said bifurcations together until they meet and then making them integrant, bolts and spacing-sleeves for securing the trusses together, and a bearing-plate secured to their centers of length.

WILLIAM P. BETTENDORF.

Witnesses:

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