

No. 871,204.

PATENTED NOV. 19, 1907.

A. CAMERON.
DRAFT DEVICE.

APPLICATION FILED NOV. 6, 1906.

2 SHEETS—SHEET 1.

Fig. 1

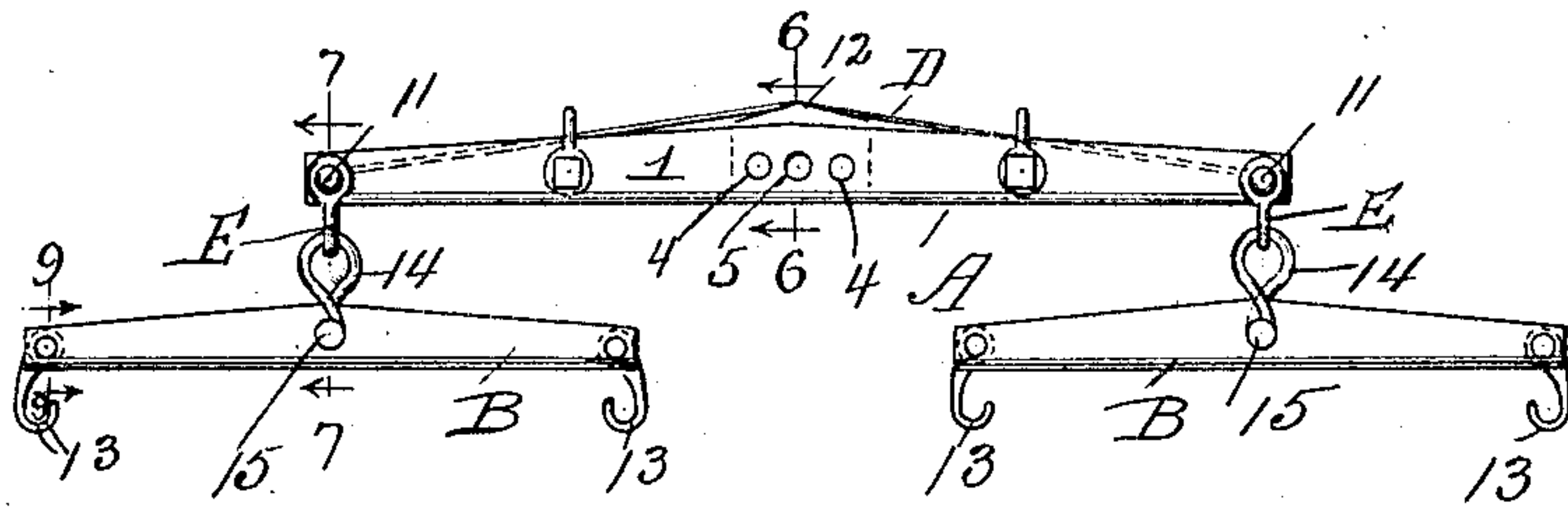


Fig. 2

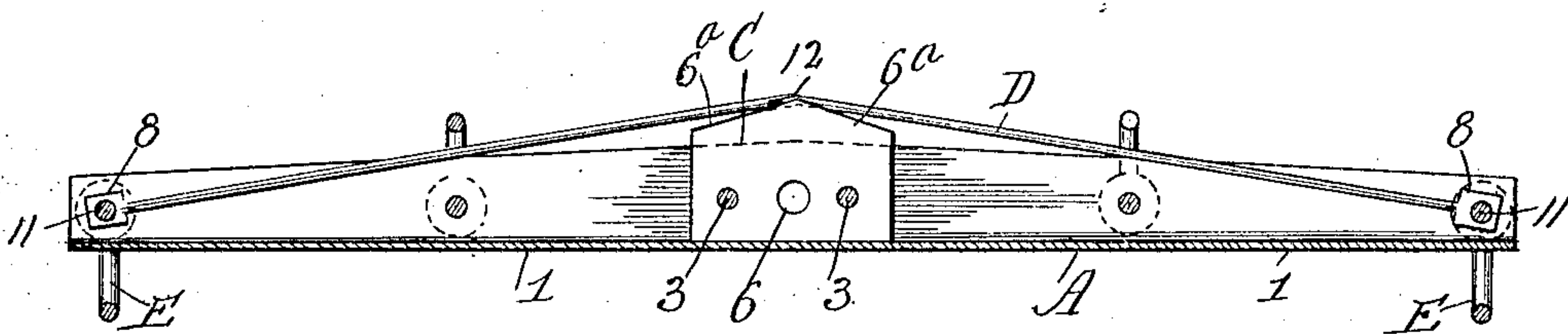


Fig. 3

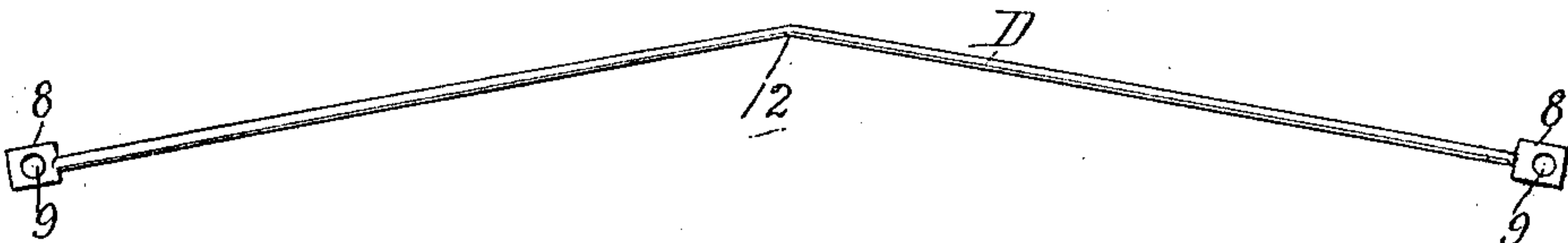
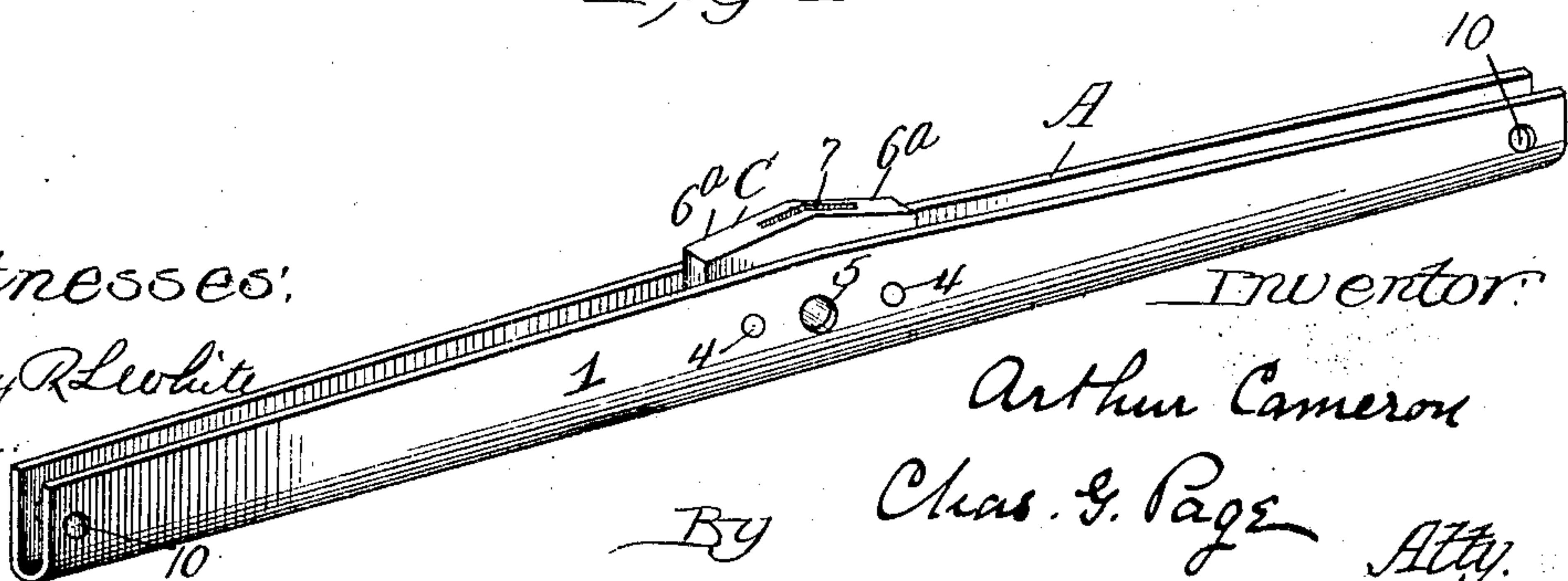


Fig. 4



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2 SHEETS—SHEET 2.

Fig. 5.

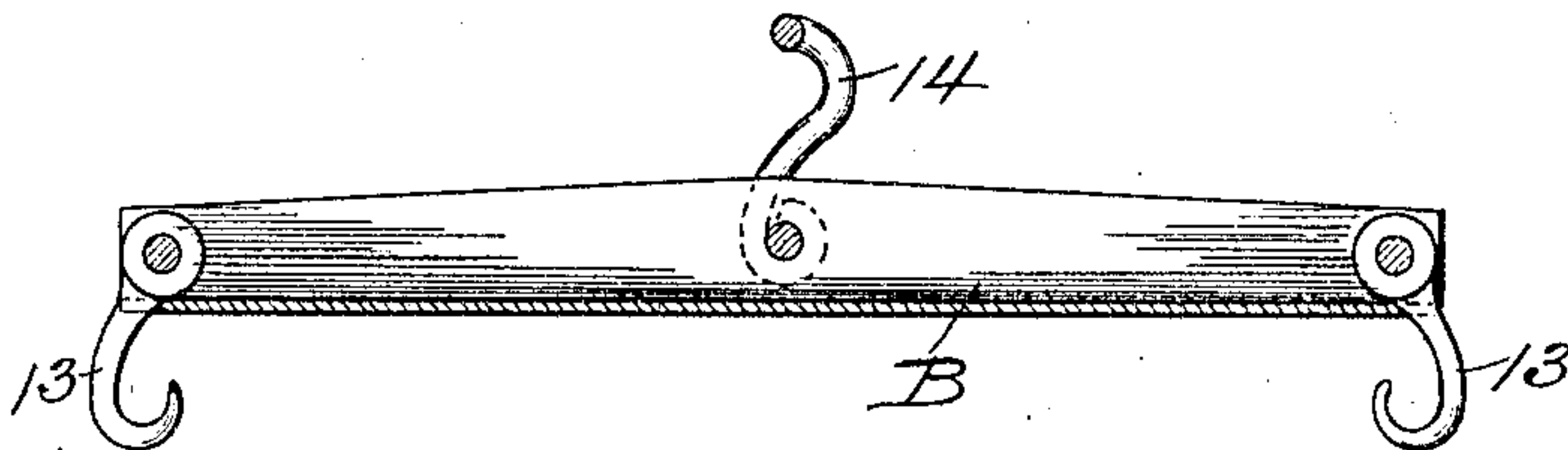


Fig. 6.

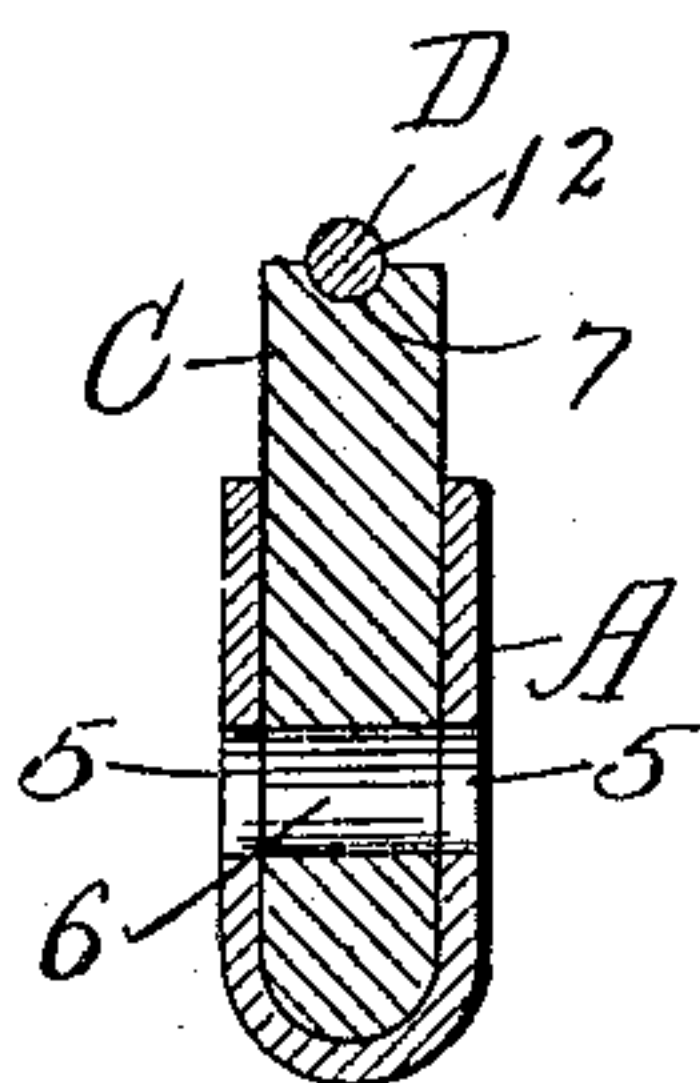


Fig. 7.

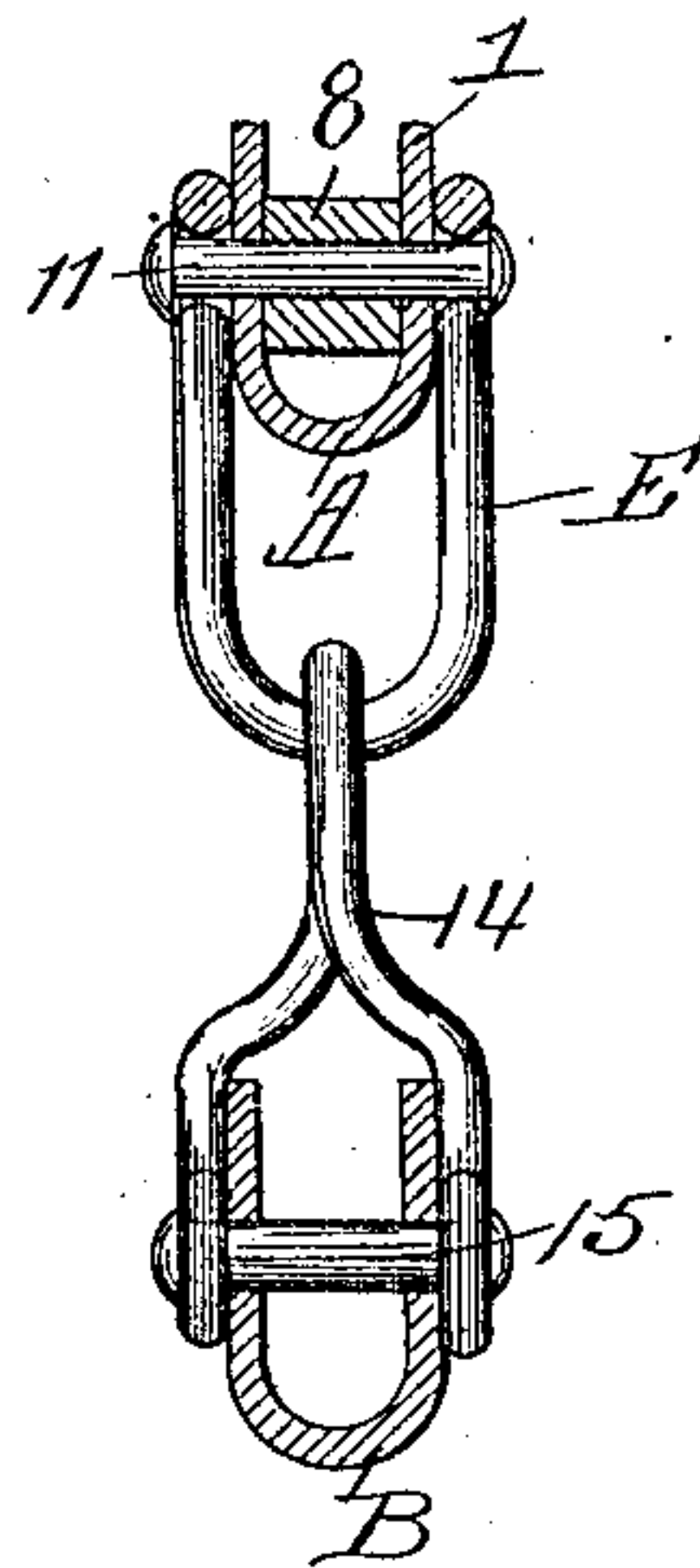


Fig. 8.

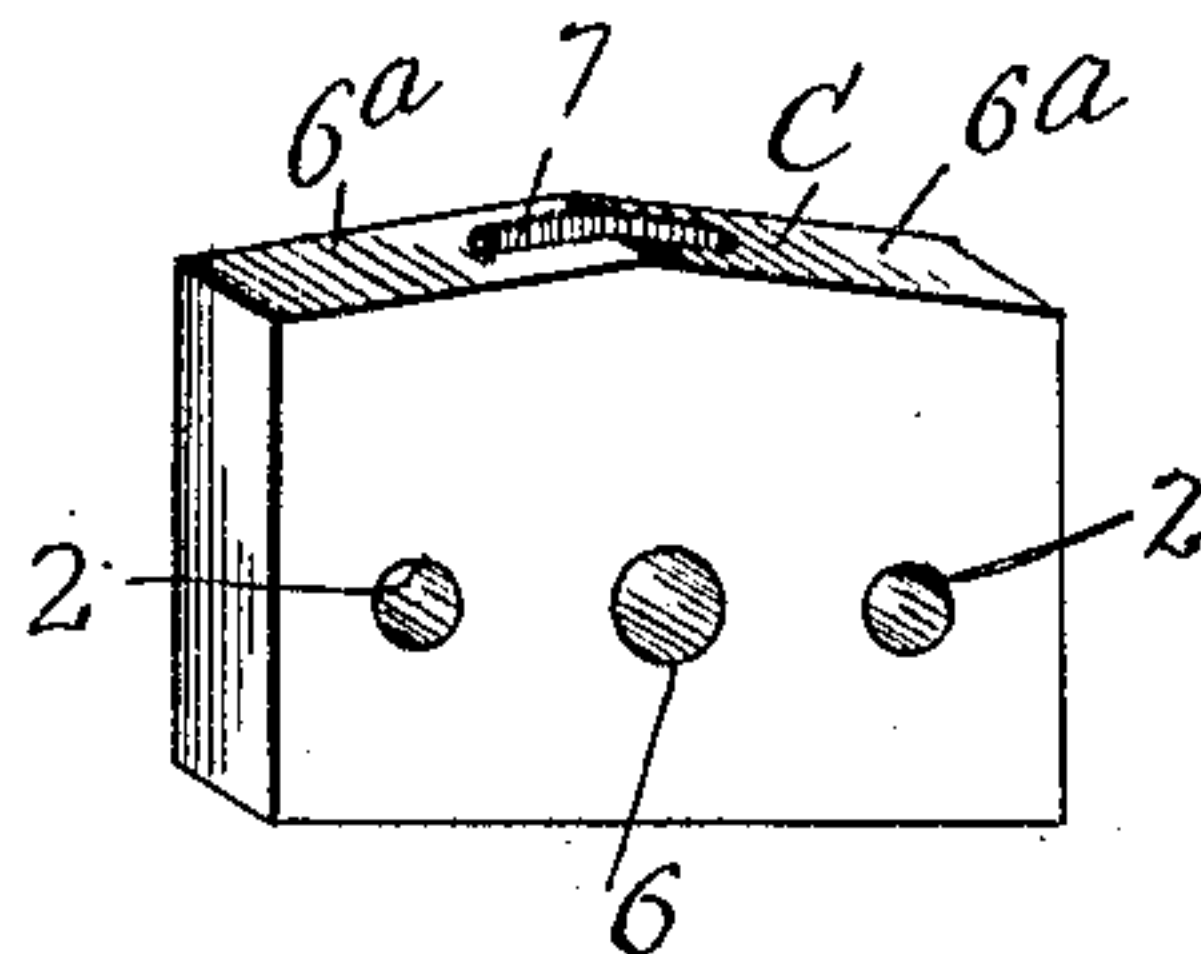


Fig. 9.

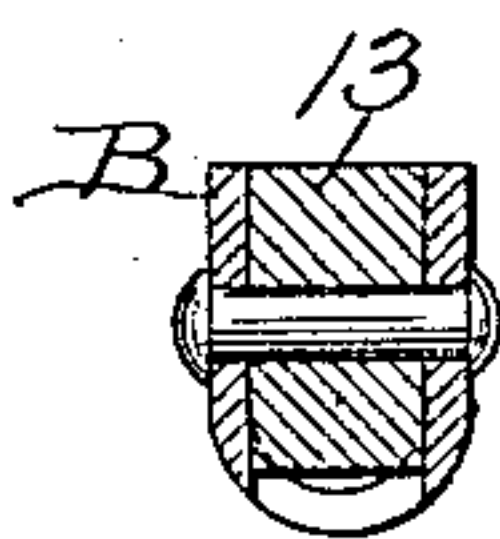
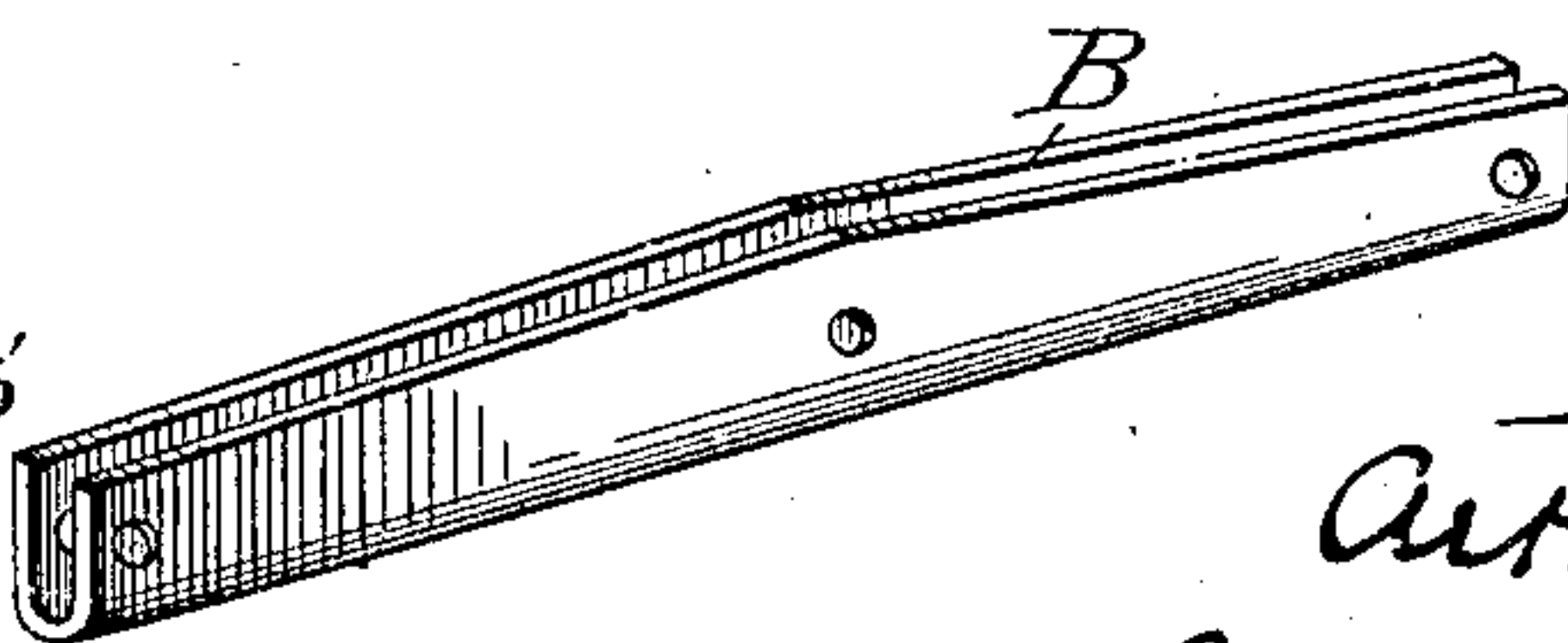


Fig. 10.



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UNITED STATES PATENT OFFICE.

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DRAFT DEVICE.

No. 871,204.

Specification of Letters Patent.

Patented Nov. 19, 1907.

Application filed November 6, 1906. Serial No. 342,268.

To all whom it may concern:

Be it known that I, ARTHUR CAMERON, a citizen of the United States, residing at Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Draft Devices, of which the following is a specification.

My invention relates to draft devices involving bars forming the main body portions of eveners or doubletrees, and swingletrees or whiffletrees, and the like, the major portion of my invention while peculiarly applicable to doubletrees being also applicable to whiffletrees when so desired.

Objects of my invention are to provide a simple, compact and durable construction; to attach the ends of a tension truss rod in an exceedingly simple and improved way; to provide in connection with the tension truss rod an improved strut which also strengthens the bar or body and provides a desirable bearing for an attaching bolt or pin; to simplify connecting means between the truss rod, the bar, and the loops or clevises at the ends of the bar, and to utilize a channel bar to greater advantage than heretofore in forming doubletrees and swingletrees.

In the accompanying drawings: Figure 1 is a top plan view of the doubletree, and a pair of whiffletrees attached thereto. Fig. 2 is a section taken longitudinally and centrally through the doubletree, the combined strut and bearing C being however shown in elevation as is also the truss rod. Fig. 3 shows the truss rod detached. Fig. 4 is a perspective view of the doubletree, the truss rod and its attaching means being omitted for convenience of illustration. Fig. 5 is a section taken centrally and longitudinally through one of the whiffletrees. Fig. 6 is a section on line 6, 6, in Fig. 1 on a larger scale, it being observed that Fig. 1 is on a smaller scale than the remainder of the figures. Fig. 7 illustrates a section on line 7, 7, in Fig. 1. Fig. 8 is a perspective view of the combined strut and bearing. Fig. 9 illustrates a section on line 9, 9, in Fig. 1. Fig. 10 shows in perspective one of the channel bars used in forming a whiffletree.

A indicates a doubletree or evenner, and B, B, denote the whiffletrees, singletrees, or swingletrees as they are indifferently termed in the art. The doubletree bar 1 is made U-shaped in cross-section, its two opposite side flange portions thus formed by such con-

struction being made to decrease in width from the middle toward the ends of the bar, thereby widening and strengthening the bar at its middle portion and also providing at such point a relatively increased area of bearing surface for a combined strut and bearing block C, without undesirably increasing the weight of the bar as a whole. The block C is snugly fitted within the channel of the bar at a point intermediate of the ends of the latter, and serves as a strut for the tension truss rod D, and as a bearing between and for the flange portions of the doubletree bar, thereby insuring spaced rigidity and permanence of form, and also providing a solid bearing for a bolt used for example to attach the doubletree to a tongue or pole, or to a clevis. The member C which thus provides the combined strut and bearing is provided with transversely extending rivet holes 2 (Fig. 8) for fastening rivets 3 (Fig. 2), which are extended through said holes in the member C, and also through corresponding openings 4 in the flange portions of the bar 1. Each flange portion of the bar is also provided with a middle bolt hole 5 arranged between two of the rivet openings 4, and the member C is provided with a central or substantially central bolt hole 6 arranged between its rivet holes 2, and in register with the bolt holes 5 of the bar when the member C is secured in place by the rivets as illustrated.

The member C is of a length to provide a suitable extent of bearing between the flanges of the bar and it is formed in cross-section to snugly fit within the channel formed by the U-shaped bar. Said member C is also of a width to permit it to extend out from the bar channel, and its outer edge portion is preferably substantially rounded or double beveled so as to provide it with two outer edge portions 6^a, 6^a, which diverge from a middle point toward the bar, the portion of said member C at and adjacent to its high edge point being provided with a longitudinal groove 7, which receives and forms a seat for holding the middle portion of the truss rod D. By this simple and compact arrangement, the truss bar is effectively stayed at its middle portion by an exceedingly simple and rigid strut which also subserves other useful purposes as hereinbefore mentioned.

The truss bar D has its end portions formed or provided with bearing and attach-

ing heads 8, adapted to fit within the end portions of the bar channel, as best shown in Figs. 2 and 7. These members 8 fit against the opposite inner walls of the channel and provide stays or braces which strengthen the channel bar 1 at its end portions. These heads or members 8 are each provided with a bolt or rivet hole 9 (Fig. 3), and these holes 9 are in register with similar bolt or rivet holes formed through the flanges of the channel bar. The truss rod as a whole is made a little short so that when it is suitably heated and applied in such condition, its longitudinal expansion will be sufficient to bring the bolt holes 9 at its ends in register with holes 10 of the bar flanges, and when the truss rod is thus applied, its ends are securely attached by bolts or rivets 11, which are inserted through the holes 9 and 10, as best illustrated in Fig. 7. With this arrangement the truss rod diverges from its middle point 12 toward the end portions of what may be termed the bottom part of the channel, so that the two portions of the truss rod incline inwardly from their pointed engagement with the strut and enter the channel of the bar at points between the strut and the bolts 11, thereby providing a compact arrangement and avoiding mutilation of the doubletree bar. These bolts or rivets 11 also project laterally from opposite sides of the channel bar so as to engage and hold in connection with the bar the doubletree loops or clevises E, and in this way, each bolt or rivet 11 holds an end portion 8 of the truss rod in place within the channel bar, and it also attaches to the outer sides of the channel bar the two arms or prongs of a loop or clevis E. With this arrangement, the ends 8 of the truss rod brace the flanges of the channel bar as against laterally inward pressure, and also provide extended bearings for the bolts or rivets 11.

The whiffletree bars are each a channel bar formed substantially like the doubletree bar, and each whiffletree is provided at its ends with trace hooks 13. These whiffletrees are also provided with twisted loops 14, which are linked to the loops or clevises E of the doubletree bar. The loops 14 straddle the whiffletree bars and are attached thereto by bolts or rivets 15, as best shown in Fig. 7.

It is obvious that the doubletree hereinbefore described can be reduced in size and used as a whiffletree if so desired, and as my invention is therefore obviously applicable to both doubletrees and swingletrees, I desire to so cover its application.

With further reference however to the connections between the whiffletrees and the doubletree or evener, it will be seen that by twisting the loops 14, the line of draft is in a plane intersecting the doubletree intermediate of its side flanges, owing to the twisted arrangement of the loops 14, and that tor-

sional strain on the whiffletree and doubletree is avoided.

What I claim as my invention is:

1. A channel bar for the purpose set forth, a combined strut and bearing member secured within the middle portion of the channel bar; a truss rod under tension having its middle portion engaging the combined strut and bearing member, and having its end portions secured within the end portions of the channel bar and provided at its terminals with heads forming bearings which are fitted within the channel bar and secured in place therein by bolts extending through said head and through opposite flange portions of the channel bar.

2. The combination with a channel bar for the purpose set forth, of a block fitted and secured within the channel of said bar intermediate of the ends of the latter and forming a bearing for a bolt and strengthening the middle portion of the channel bar, said block being also formed to project above the channel of the bar to form a strut bearing for a tension rod; and a tension rod secured at its ends within the end portions of the channel bar and having its middle portion engaging and held against lateral strain by a portion of the strut block which projects out from the channel, the said block and sides of the channel bar being respectively provided with registering bolt holes 6 and 5.

3. The combination with a channel bar for the purpose set forth, of a tension rod; a strut secured to the middle portion of the channel bar; a tension rod engaging the strut and having its end portions provided with heads; loops embracing end portions of the channel bar, and bolts engaging and holding said loops and passing through the flange portions of the channel bar and through the heads with which the truss rod is provided at its terminal portions.

4. The combination with a channel bar for a doubletree or swingletree, of a tension rod having its end portions secured within the end portions of the channel of said bar, and its middle portion raised above such channel; and a combined strut and bearing consisting of a block fitted between the inner sides of the channel bar and strengthening the same and having a portion projecting upward out from the channel and having a seat for the middle portion of the tension bar, the block being bolted within the channel bar by transverse bolts, and also having a bolt hole formed between its ends and registering with corresponding bolt holes with which the sides or flanges of the channel bar are provided.

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