

A. E. ROACH.
BEAM OF FLANGED IRON.
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999,262.

Patented Aug. 1, 1911.

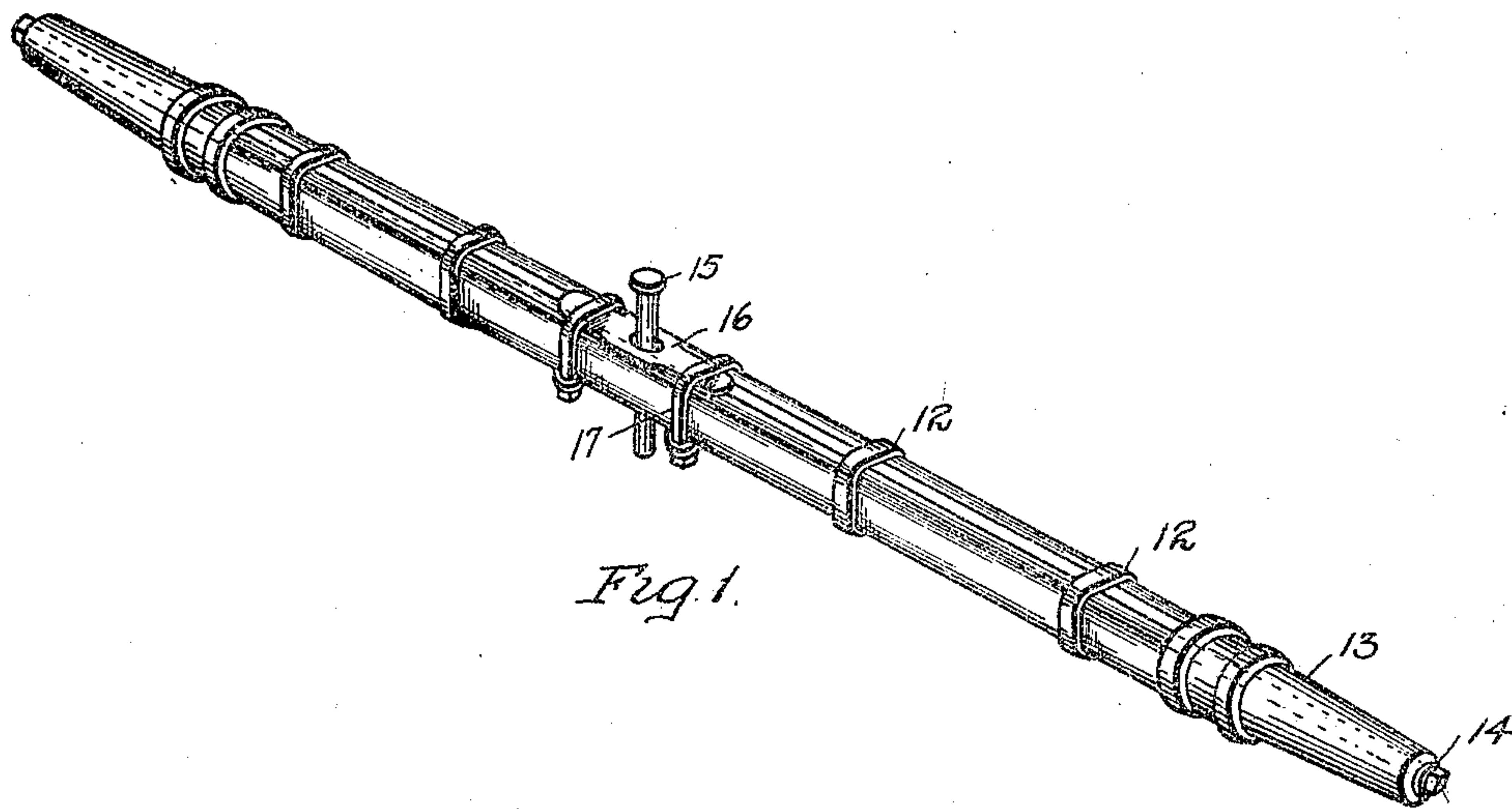


Fig. 1.

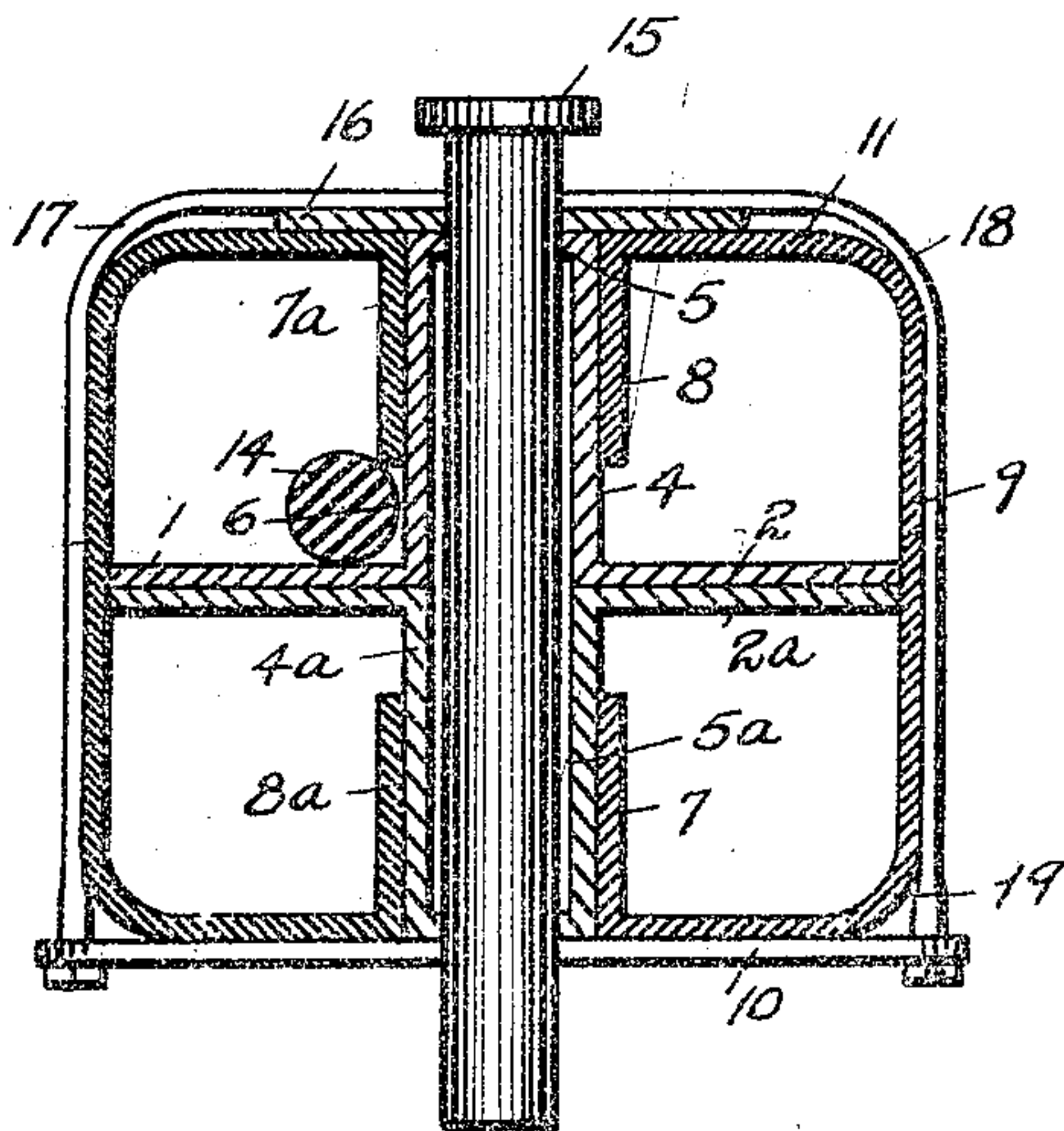


Fig. 2.

WITNESSES.

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BEAM OF FLANGED IRON.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ADOLPHUS E. ROACH, a subject of the King of Great Britain, and residing at Leamington, Ontario, Canada, but temporarily domiciled at Ypsilanti, county of Washtenaw, State of Michigan, have invented a certain new and useful Improvement in Beams of Flanged Iron, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to composite beams.

It has for its object an improved construction and arrangement of structural iron to be used for beam purposes, and while the completed structure is useful in any place where a beam having a substantially even external surface is desired, it is particularly useful for the cross members and longitudinal members of vehicles, and it is shown in the drawings as employed in axle construction, as such a construction would be one of the most complicated forms in which it would be used.

In the drawings:—Figure 1, shows in perspective an axle formed according to the invention. Fig. 2, is a cross section at the middle point of the axle.

The beam is built up of two C members and two double angle members. Each double angle member is constructed with double flanges 1, 2, which are in the same plane and spread from parallel web parts 4 and 6, which latter are joined by a cross web 5. The three parts 4, 5 and 6 comprise a channel bar with which the two flanges 1 and 2 are in angular relation. The C member has two inturned flanges 7 and 8 which lie parallel to the web 9 and spaced therefrom by webs 10 and 11. The flanges 7 and 8 are not closed together but are spaced along their adjacent edges by a distance sufficient to allow the webs 2 and 2^a to enter freely the cavity within the C member. As shown in the drawings the slot between the adjacent edges of 7 and 8 is much larger than is necessary for the insertion of the flanges of the two angle members, and the exact extent across this slot is not limited. The inturned flange 8 engages closely along the web member 4. The inturned flange 7 engages closely along the web member 5^a. Preferably at the turn 18 from the web 9

to the web 11 there is not an acute angle, but a rounded or arched meeting surface both inside and outside of the C member.

The beams are assembled by selecting two of the double angle members and placing the flanges thereof in engagement, then two of the C members are selected and assembled with the two double angled members by placing the inturned flanges 7 and 8 and 7^a and 8^a in close engagement with the webs 4 and 5, 4^a and 5^a. The assembled structure now has a substantially continuous surface around it and is substantially rectangular except that the angles are arched, and, of course, the arching may be extended to make the structure nearly round if it be desired. The assembled members are held together by rings 12, and if used for an axle shell skeins 13 properly made with mouths corresponding to the rings 12 are placed over the ends and are tied together by a rod 14 which extends from end to end, preferably through the cavity in one of the C members and not within the cavity of the members 4 and 5, inasmuch as it is necessary in a wagon axle to provide for the passage of the central king bolt 15 through the cavity between the plates 4 and 5. The king bolt 15 passes through the beam, and at the place prepared for its passage the beam is strengthened by a bearing plate 16 preferably held to the beam by shackles 17.

In this structure it will be noticed there are four thicknesses of metal extending across or partly across the beam in either direction. The webs 9 extend entirely across. The webs 10 and the cross webs 5 together extend across. The webs 1 and 2 extend partly across leaving between their adjacent edges a space equal to the cross web 5 and the flanges 7 and 8 extend partly across leaving between their adjacent terminals about the same space as that of the cross web 5.

What I claim is:—

1. As a new article of manufacture, a composite beam comprising a central member provided with longitudinally extending flanges projecting from opposite sides thereof, a pair of members C shaped in cross section, engaging with their open sides over said flanges, and encircling rings for holding the parts in assembled relation, substantially as described.

2. As a new article of manufacture, a beam, having in combination a pair of angled members, each having a pair of lon-

gitudinally extending flanges located adjacent to the corresponding parts of the other, a pair of cross-sectionally C shaped members engaging with their open sides over the
5 flanged portions of said angled members, end members engaging over the assembled members at each end, and a rod for holding said end members in place, engaging longitudinally through the interior of the beam,
10 substantially as described.

3. As a new article of manufacture, a beam having in combination a pair of central angled members having laterally pro-

jecting flanged portions extending lengthwise thereof, a pair of outer members open
15 at one side, engaging with said open portions over the flanged portions of the angled members and against the body parts thereof, and means for holding said parts in assembled relation, substantially as described. 20

In testimony whereof, I sign this specification in the presence of two witnesses.

ADOLPHUS E. ROACH.

Witnesses:

CHARLES F. BURTON,
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