

No. 881,612.

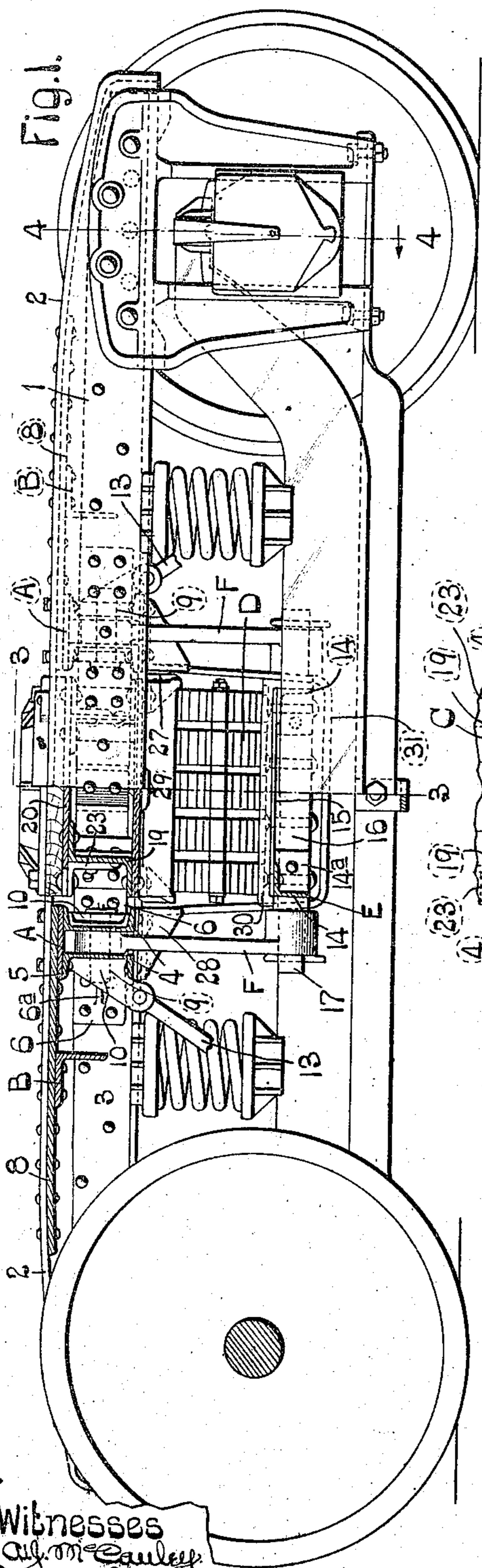
A. E. OSTRANDER.

PATENTED MAR. 10, 1908.

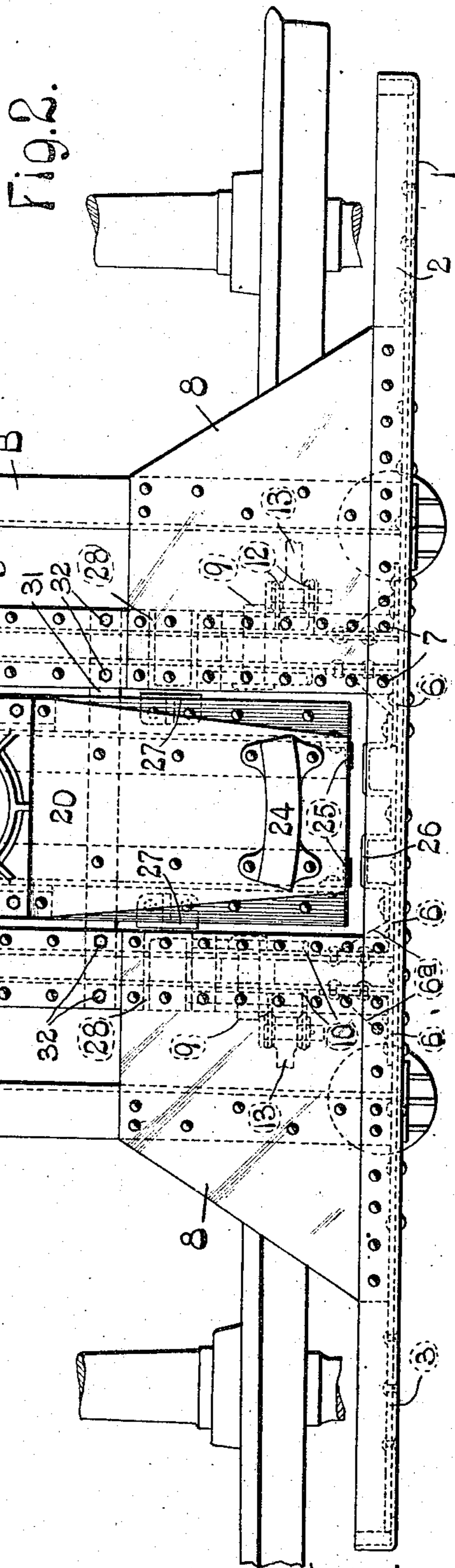
CAR TRUCK.

APPLICATION FILED OCT. 12, 1907.

3 SHEETS—SHEET 1.



Witnesses  
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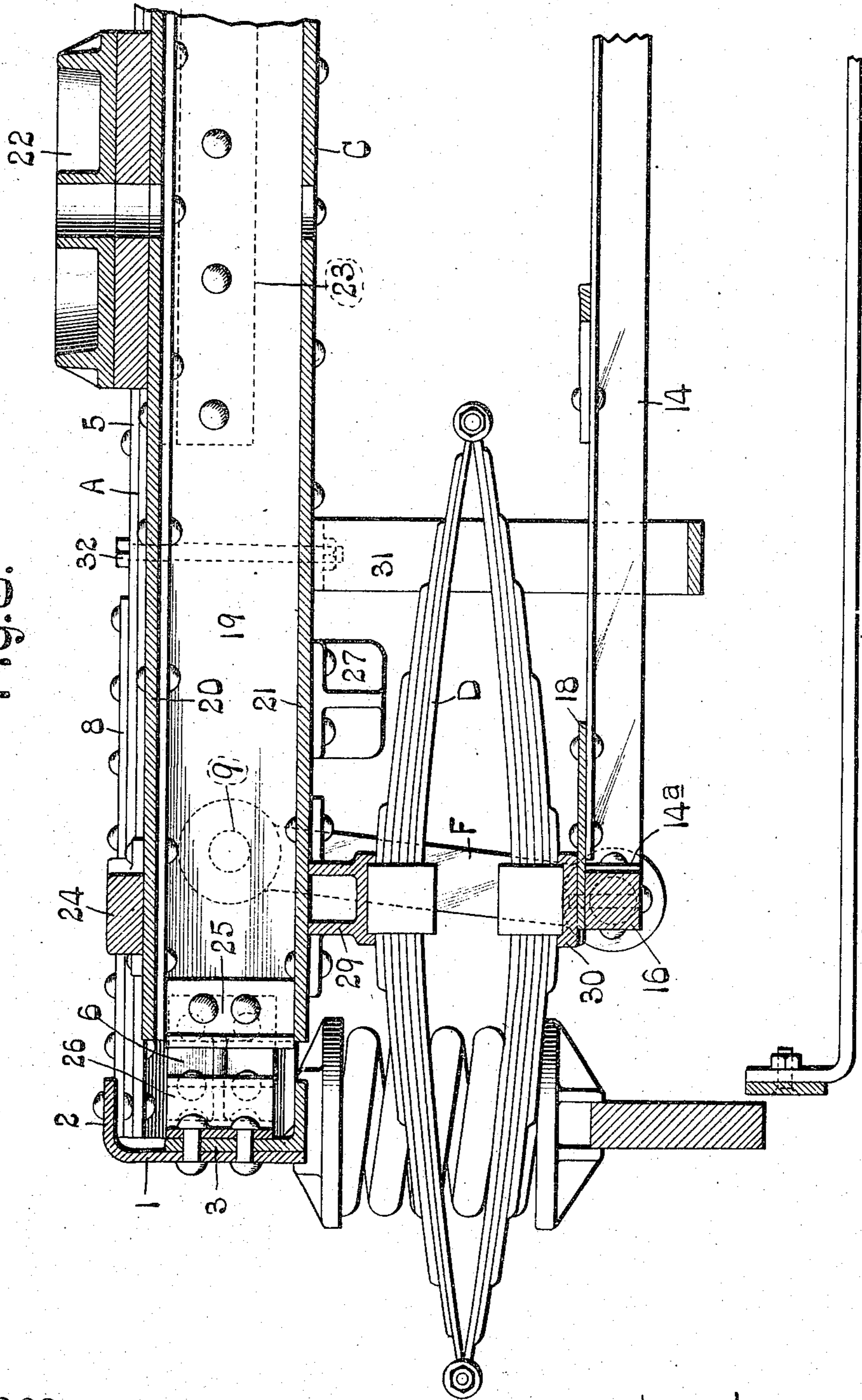
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3 SHEETS—SHEET 2.

Fig. 3.



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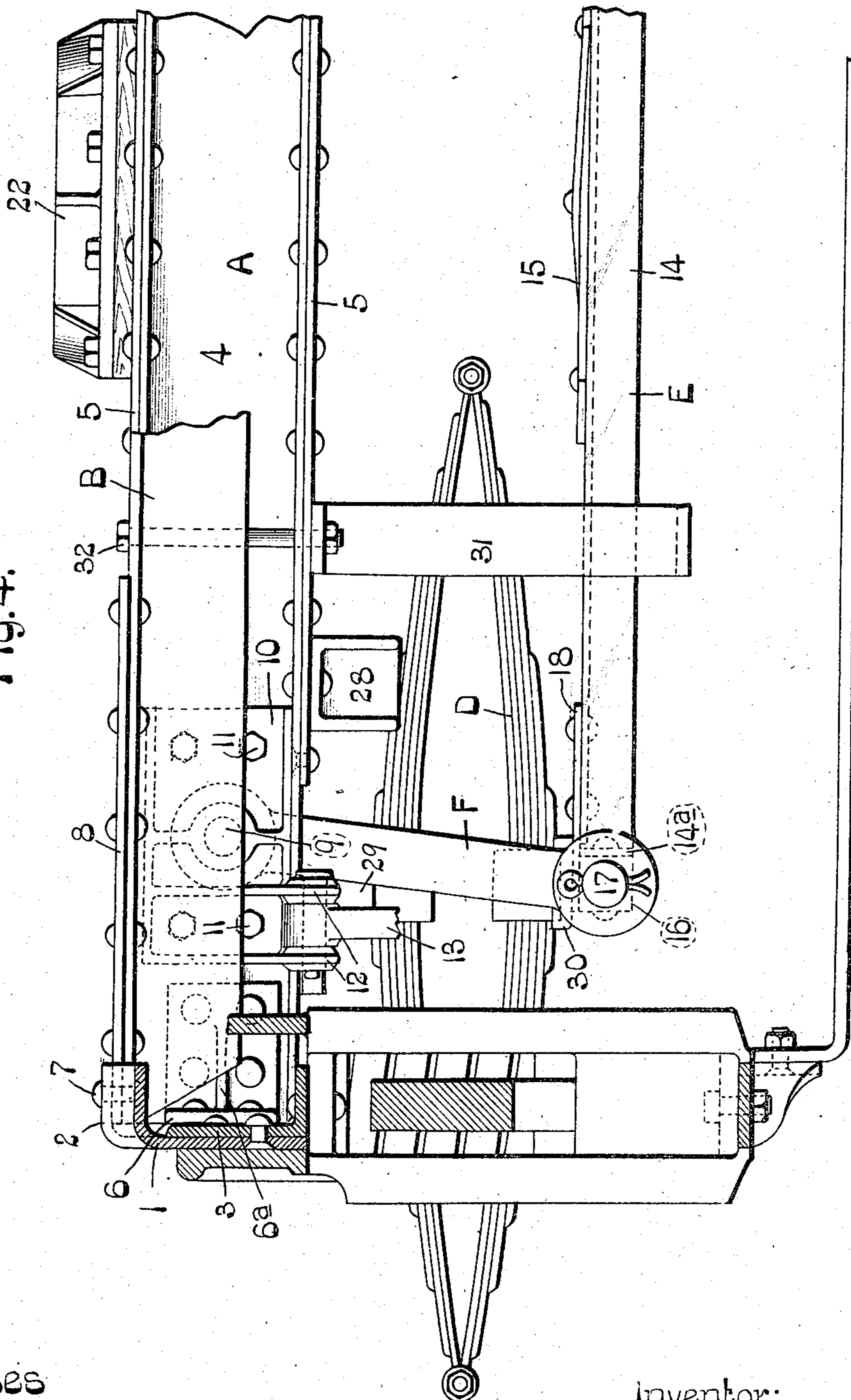
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3 SHEETS—SHEET 3.

Fig. 4.



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# UNITED STATES PATENT OFFICE.

ALLEN EDWARD OSTRANDER, OF PATERSON, NEW JERSEY, ASSIGNOR TO AMERICAN CAR AND  
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## CAR-TRUCK.

No. 881,612.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed October 12, 1907. Serial No. 397,115.

*To all whom it may concern:*

Be it known that I, ALLEN EDWARD OSTRANDER, a citizen of the United States, residing at Paterson, Passaic county, New Jersey, have invented a certain new and useful Improvement in Car-Trucks, 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 side elevation of a car truck embodying the features of my invention; Fig. 2 is a top plan view of a portion of the truck shown in Fig. 1; Fig. 3 is a vertical transverse sectional view taken on the line 3—3 of Fig. 1; and Fig. 4 is a view similar to Fig. 3 taken at approximately the point indicated by the line 4—4 on Fig. 1, looking in the direction of the arrow.

This invention relates to car trucks.

The object of my invention is to provide a passenger car truck that is strong, light and inexpensive to manufacture, and which is provided with a swing motion bolster of novel construction.

Referring to the drawings which illustrate the preferred form of my invention, 1 designates the side frames or wheel pieces of the truck which are preferably formed of pressed metal, said pieces being provided at their ends and upper edges with integral inwardly projecting flanges 2. An angle 3 having its horizontal leg projecting inwardly is secured to the lower edge portion of each of the wheel pieces 1, thereby producing a built-up structure of approximately channel-shape in cross section. The wheel pieces or side frames 1 are connected together by two transoms A, and two auxiliary transoms B that are preferably formed by commercially rolled angles which are arranged parallel to the transoms A, as shown in Fig. 2. Each of the transoms A consists of a pair of commercially rolled members, preferably channels 4, which are arranged with their horizontal legs or flanges projecting in opposite directions, as shown in Fig. 1, the webs of said channels being spaced apart to receive the hangers that support the spring plank as hereinafter described. Top and bottom cover plates 5 are secured to the flanges of the channels 4 and the end portions of said channels are arranged between the inwardly

projecting flanges of the side frames 1 and are secured to the vertical webs thereof by means of angle-shaped connecting devices 6 which are preferably formed of malleable iron, each of said connecting devices being provided with a horizontal reinforcing web 6<sup>a</sup> that connects the vertical legs thereof together. These connecting devices 6 are secured to the outside faces of the webs of the channels 4, as shown in Fig. 4, and also to the vertical legs of the angles 3 which are connected to the pressed metal wheel pieces 1. The bottom cover plates of the transoms A terminate short of the side frames but the top cover plates project underneath the top flanges 2 of said side frames and are secured thereto by rivets 7 which also pass through gusset plates 8 interposed between said top cover plates and the inwardly projecting flanges of the side frames, as shown clearly in Fig. 4. The transverse angles or auxiliary transoms B have their horizontal legs secured to the gusset plates 8 and also to the top flanges 2 of the side frames 1 by rivets or other suitable fastening devices.

By building the truck in the manner above described I obtain a very rigid and strong structure without the use of end pieces connecting the end portions of the side frames together, thereby producing a short truck.

The bolster C of the truck is of the swing-motion type and is mounted on springs D that are supported by a spring plank E, said spring plank being carried by hangers F which are pivotally supported at their upper ends in castings 10 which are supported by the transoms A of the truck frame. The upper ends of the hangers F are arranged between the channels 4 of the transoms A, as shown in Fig. 1, and the pins 9, on which said hangers are pivotally mounted, pass through the webs of said channels and are sustained or supported by the cast metal bearings 10 which are secured to the outside faces of the webs of the channels 4 by fastening devices 11, said bearings 10 fitting snugly between the flanges of the channels 4, as shown in Fig. 4, so that the lower flanges of said channels will relieve the fastening devices from shearing strains. These cast metal bearings 10 are also provided with integral bearings 12 in which the fulcrum pins for the brake hangers 13 are mounted.

The spring plank E preferably consists of two parallel angles 14 which are connected

together at the middle of the plank by cross bars or braces 15, the end portions of said angles being secured to rectangular-shaped bars 16 provided with integral trunnions 17 that pass through bearings on the lower ends of the spring plank hangers F. The angles 14 may be connected to the bars 16 in any suitable manner but I prefer to bend the vertical legs of said angles at right angles to produce an attaching flange 14<sup>a</sup>, as shown in Fig. 3, and also secure the horizontal legs of said angles to plates 18 which are fastened to the upper sides of the bars 16.

The bolster C is a built-up structure which preferably consists of a pair of transversely-extending Z-bars 19 arranged with their lower legs projecting outwardly and their upper legs projecting inwardly, as shown in Fig. 1. Top and bottom cover plates 20 and 21 are secured to the upper and lower legs of the Z-bars 19 and the usual center bearing 22 is mounted on the top cover plate. The central portion of the top cover plate 20 is the same width as the bottom cover plate 21 so that it projects laterally from the vertical webs of the Z-bars, the projecting portions of said top cover plate being strengthened and supported by means of angles 23 secured to the vertical webs of the Z-bars 19, as shown in Figs. 1, 2 and 3. The top cover plate 20 tapers or diminishes in width from the middle towards the ends of the bolster, as shown in Fig. 2, and adjacent the ends of the bolster side bearings 24 are secured to said top cover plate. At the ends of the bolster short pieces 25 of angle iron are interposed between the top and bottom cover plates and are secured to the inside faces of the vertical webs of the Z-bars 19 to form chafing irons which cooperate with chafing irons 26 secured to the inside faces of the side frames 1, as shown in Figs. 2 and 3. Chafing irons 27, which are secured to the bottom cover plate of the bolster C, cooperate with chafing irons 28 that are secured to the bottom cover plates of the transoms A of the truck frame. The springs D on which the bolster C rests are mounted in upper and lower spring seats 29 and 30 connected, respectively, to the bottom cover plate of the bolster and to the plates 18 on the end portions of the spring plank E, as shown in Fig. 3. The truck is also provided with safety hangers for the spring plank, said safety hangers consisting of bars 31 that are flanged at their upper ends and connected by fastening devices 32 to the transoms A of the truck.

Having thus described my invention; what I claim as new and desire to secure by Letters Patent is:

1. A car truck provided with a side frame which consists of a pressed metal plate provided at its ends and one edge with a continuous integral flange, and a commercially rolled member secured to the other longi-

tudinal edge portion of said plate and having a horizontal leg projecting in the same direction as said integral flange on said plate; substantially as described.

2. A car truck provided with a side frame which consists of a pressed metal plate provided with an integral inwardly projecting flange at its ends and upper edge, and an angle secured to the lower edge portion of said plate and arranged with its horizontal leg projecting inwardly; substantially as described.

3. A car truck comprising approximately channel-shaped side frames arranged with their flanges projecting inwardly, a pair of transversely extending transoms secured to said side frames and having their ends arranged between the inwardly projecting flanges of said frames, a bolster located between said transoms, and auxiliary transoms extending parallel to the transoms first referred to and connected to said side frames; substantially as described.

4. A car truck comprising approximately channel-shaped side frames which consist of pressed metal pieces provided with one integral flange, and a parallel flange formed by a commercially rolled member, transversely extending transoms connected to said side frames, and auxiliary transoms extending parallel to the transoms first referred to and also being connected to the side frames; substantially as described.

5. A car truck comprising approximately channel-shaped side frames arranged with their flanges projecting inwardly, transversely extending transoms, a bolster arranged between said transoms, auxiliary transoms extending parallel to the transoms first referred to, and gusset plates secured to the upper flanges of the side frames and having the main transoms and the auxiliary transoms connected thereto; substantially as described.

6. A car truck comprising approximately channel-shaped side frames arranged with their horizontal legs or flanges projecting inwardly, transversely extending transoms each of which consists of a pair of channels arranged with their legs projecting in opposite directions and having their ends located between the inwardly projecting flanges of the side frames, gusset plates connected to the upper flanges of the side frames and having the upper flanges or legs of said channels secured thereto, and angle-shaped connecting members secured to the webs of said channels and to the webs of the side frames; substantially as described.

7. A car truck comprising approximately channel-shaped side frames arranged with their horizontal legs or flanges projecting inwardly, transversely extending transoms each of which consists of a pair of channels arranged with their legs projecting in oppo-

site directions, gusset plates connected to the upper flanges of the side frames and having the upper flanges or legs of said channels secured thereto, angle-shaped connecting members secured to the webs of said channels and to the webs of the side frames, and auxiliary transoms each of which consists of a transversely extending angle that is connected at its ends to said gusset plates; substantially as described.

8. A car truck provided with pressed metal side frames having angles secured to the lower edge portions thereof, transoms consisting of transversely extending rolled members which are secured to the vertical legs of the angles on the side frames, and gusset plates connected to said members and to the side frames; substantially as described.

9. A car truck comprising side frames which consist of pressed metal plates provided on their upper longitudinal edges with integral inwardly projecting flanges, angles secured to the lower edge portions of said plates and arranged with their horizontal legs projecting inwardly, transversely extending transoms each of which consists of two parallel channels spaced apart and arranged with their flanges projecting in opposite directions, the end portions of said channels being located between the inwardly projecting flanges on the side frames, gusset plates interposed between the upper flanges of the side frames and channels and secured thereto, angle-shaped connecting members secured to the webs of said channels and to the vertical legs of the angles on the side frames, and auxiliary transoms consisting of transversely extending angles that have their horizontal legs secured to said gusset plates; substantially as described.

10. A car truck comprising side frames, transoms secured to said side frames and each consisting of parallel members that are spaced apart from each other, spring plank hangers arranged between said members, fulcrum pins passing through said members for supporting said hangers, and devices connected to the outer faces of said members to form bearings for said fulcrum pins; substantially as described.

11. A car truck provided with a transversely extending transom which consists of a member provided at its lower edge with a laterally projecting flange, a bearing secured to said member and resting on said flange, a pin mounted in said bearing, and a spring plank hanger journaled on said pin; substantially as described.

12. A car truck comprising side frames, transoms connected to said side frames and each consisting of a pair of channels having their webs spaced apart and their legs projecting in opposite directions, bearings interposed between the legs of said channels and

secured to the outer faces of the webs thereof, pins mounted in said bearings, and spring plank hangers journaled on said pins and having their upper ends arranged between the webs of said pair of channels; substantially as described.

13. A car truck comprising side frames, transversely extending transoms connected to said side frames, and members connected to said transoms to form bearings for the fulcrum pins of spring plank hangers, said members being provided with integral bearings adapted to receive the fulcrum pins of brake hangers; substantially as described.

14. A car truck comprising side frames, transversely extending transoms connected to said side frames, a bolster arranged between said transoms and consisting of a pair of rolled members having top and bottom cover plates secured thereto, the top cover plate projecting laterally beyond the sides of said rolled members, a center bearing connected to the top cover plate, and devices connected to the sides of the rolled members adjacent the center bearing to support the laterally projecting portions of the top cover plate; substantially as described.

15. A car truck comprising side frames, transversely extending transoms connected to said side frames, a bolster located between said side frames and consisting of parallel Z-bars arranged with their upper legs projecting inwardly and their lower legs projecting outwardly, a top cover plate secured to the upper legs of said Z-bars and projecting laterally beyond the vertical webs thereof, a center bearing mounted on the top cover plate, and angles secured to the vertical webs of the Z-bars to support the laterally projecting portions of the top cover plate; substantially as described.

16. A car truck comprising side frames, transoms connected to said side frames, hangers pivotally connected to said transoms, and a spring plank supported by said hanger, said spring plank consisting of parallel rolled members spaced away from each other and bars connected to the ends of said members to join them together and provided with integral trunnions that pass through the lower ends of the spring plank hangers; substantially as described.

17. A car truck comprising side frames, transoms secured to said side frames, hangers pivotally connected to said transoms, a spring plank supported by said hangers and consisting of a pair of parallel angles that are spaced away from each other, bars secured to the end portions of said angles to join them together and provided with trunnions that pass through openings in said hangers, a plate connected to the top side of each of said bars and having the horizontal legs of said angles secured thereto, spring seats carried by said plates, a bolster arranged be-

tween the transoms previously referred to, and springs interposed between said bolster and said spring seats; substantially as described.

5 18. A car truck comprising side frames, parallel transoms connected to said side frames, a swing-motion bolster arranged between said transoms, chafing irons on the inner sides of the side frames, and cooperating  
10 rigid chafing irons connected to the ends of the bolster; substantially as described.

19. A car truck comprising side frames, parallel transoms connected to said side

frames, a swing-motion bolster arranged between said transoms, chafing irons secured to 15 the underneath sides of said transoms and depending therefrom, and cooperating chafing irons on the bolster; substantially as described.

In testimony whereof I hereunto affix my 20 signature in the presence of two witnesses, this 7th day of October, 1907.

ALLEN EDWARD OSTRANDER

Witnesses:

ROBT. G. JEFFERY,  
T. H. GIBBS.