April 19, 1932. C. C. C. BURKHARDT 1,855,094

FRAME FOR ARTICULATED OIL ELECTRIC LOCOMOTIVES

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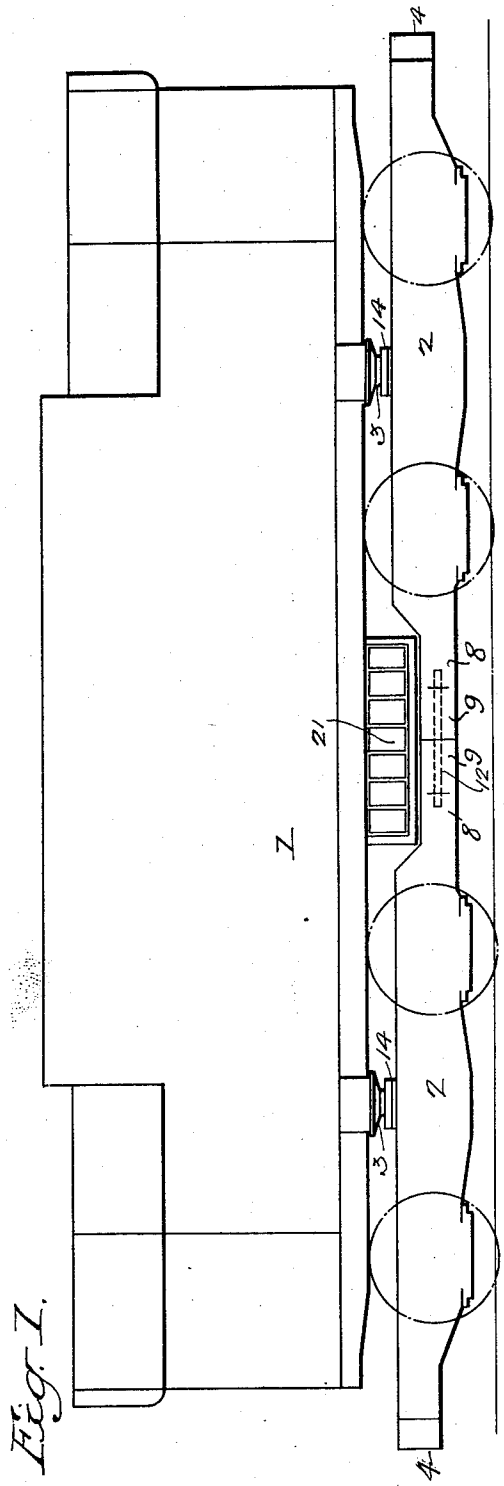

Fig. 1.

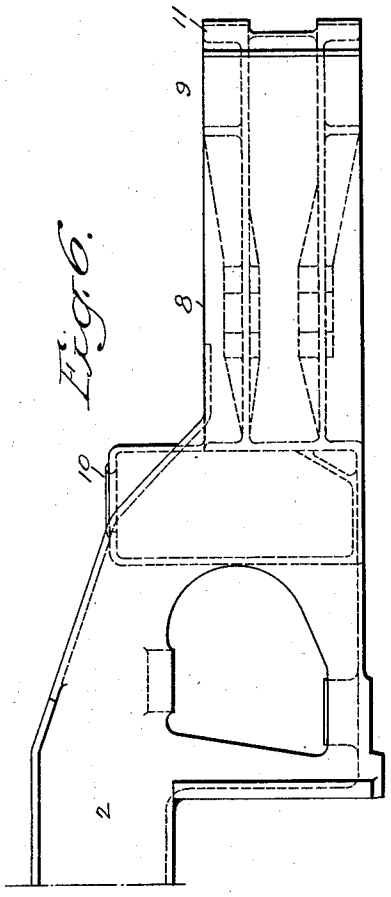

Fig. 6.

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Fig. 7.

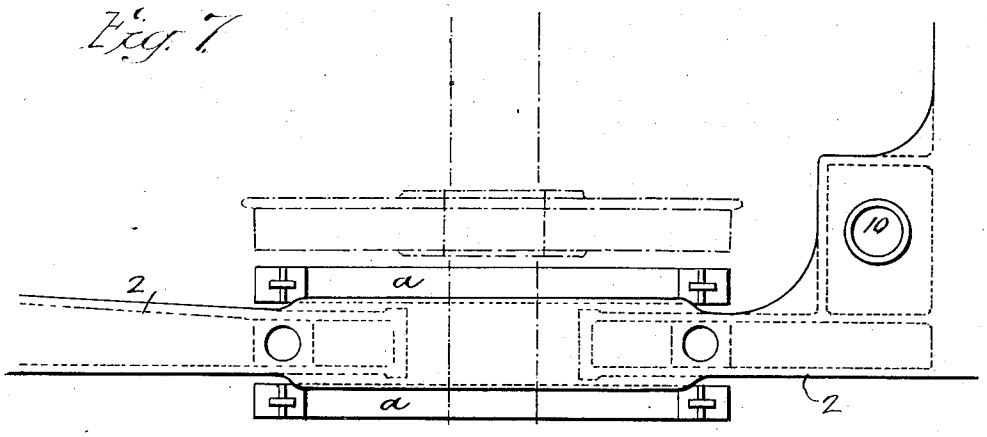


Fig. 8.

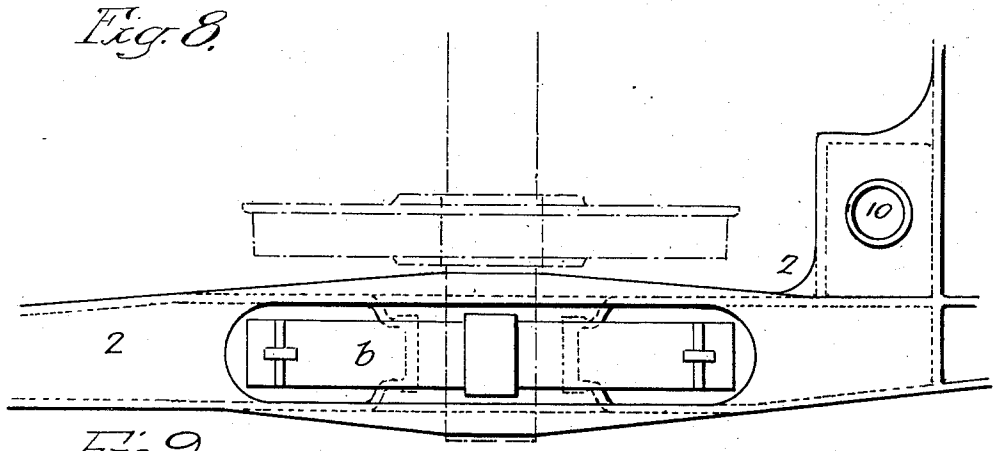
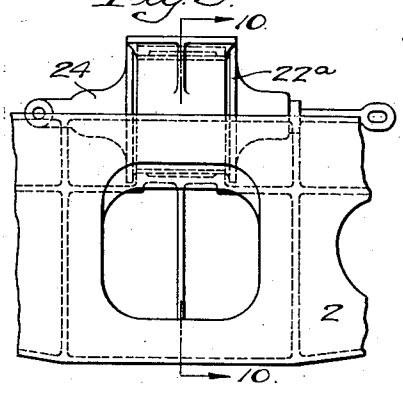


Fig. 9.



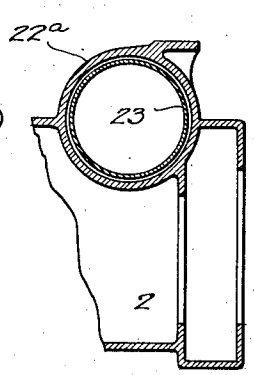


Fig. 10.

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Fig. 2.

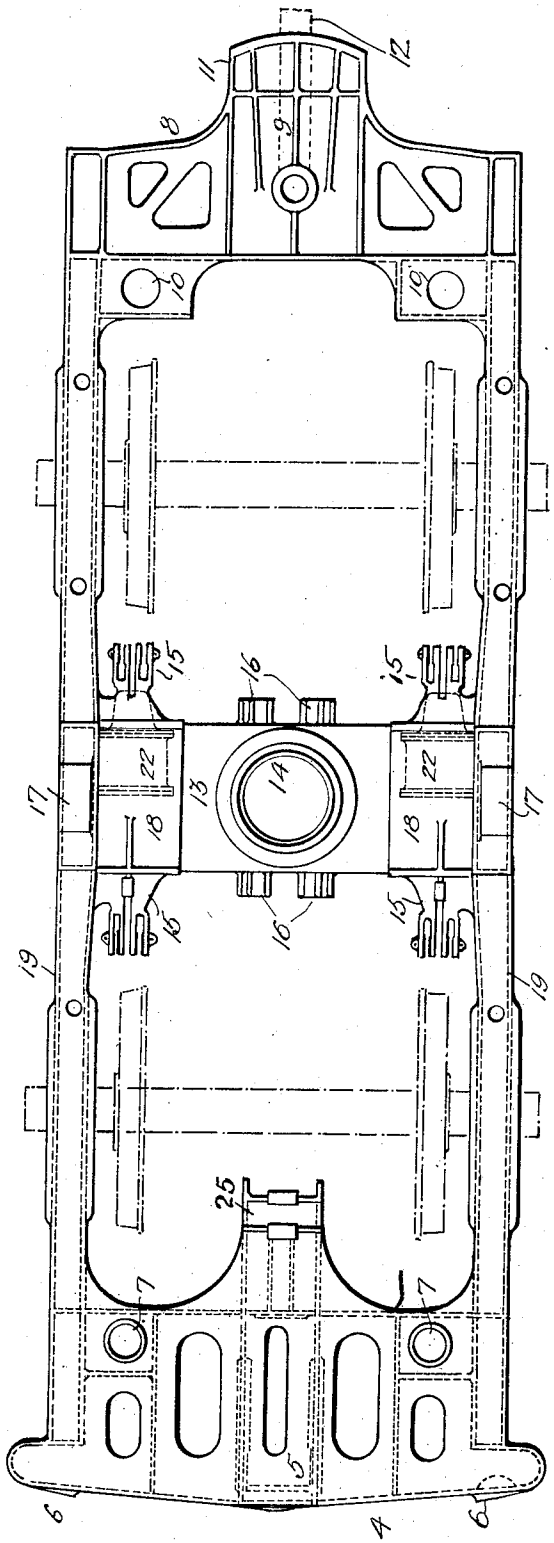
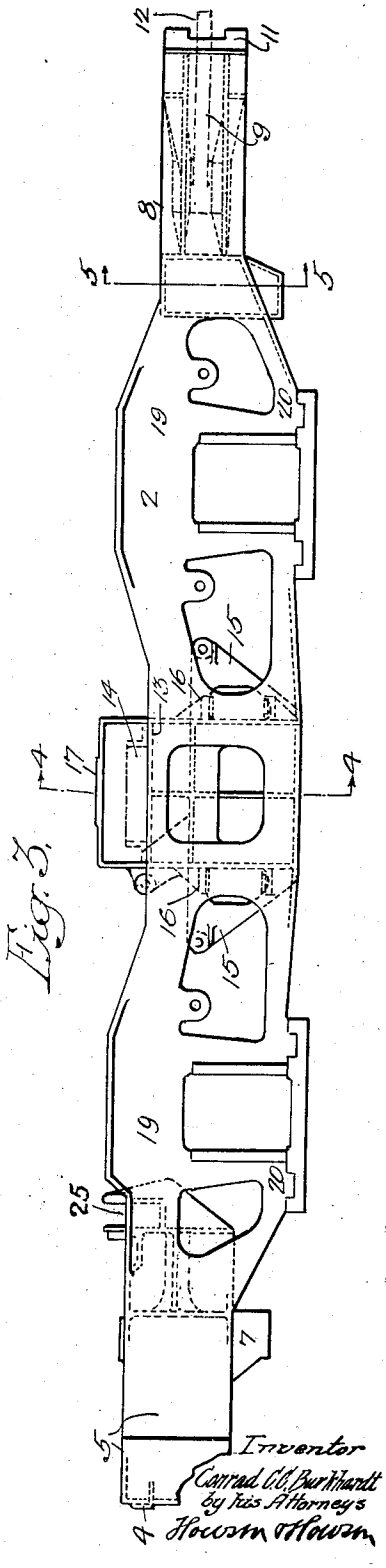


Fig. 3.



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FRAME FOR ARTICULATED OIL ELECTRIC LOCOMOTIVES

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Fig. 4.

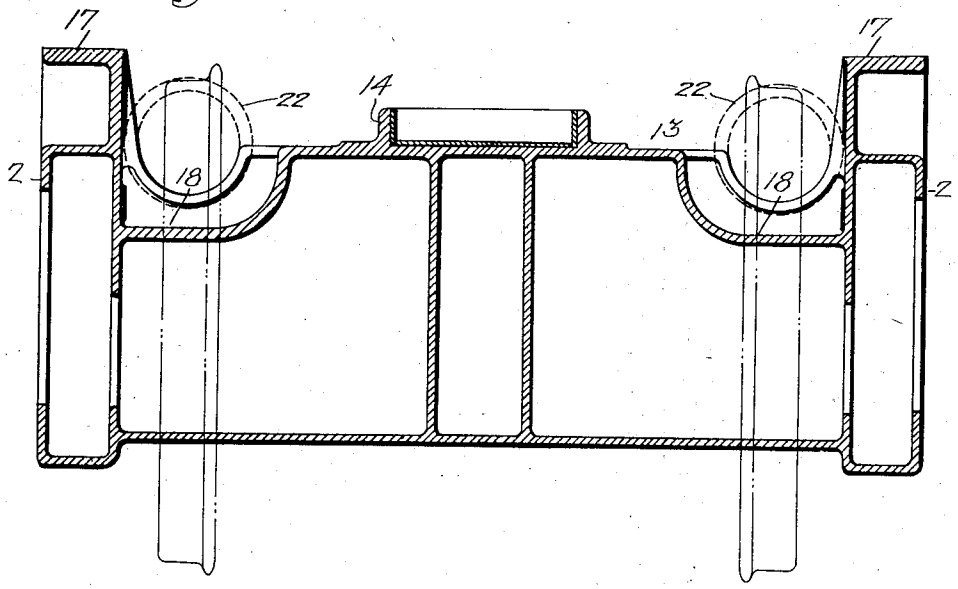
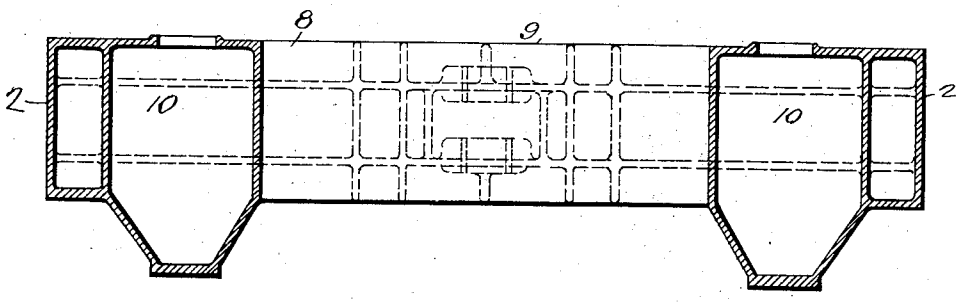


Fig. 5.



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Patented Apr. 19, 1932 1,855,094

UNITED STATES PATENT OFFICE

CONRAD C. C. BURKHARDT, OF PHILADELPHIA, PENNSYLVANIA

FRAME FOR ARTICULATED OIL-ELECTRIC LOCOMOTIVES

Application filed August 30, 1930. Serial No. 478,966.

My invention relates to certain improvements in the frames of articulated oil-electric locomotives in which the body of the locomotive is carried by two frames, which are in fact trucks connected together, the body being pivotally mounted on each frame, and each frame having a draw bar and a bumper and draw head at one end, to which may be coupled a car.

One object of the invention is to make each frame in a single casting.

A further object of the invention is to make each frame in a single casting, in which the inner bumpers are extended and in contact one with the other, so as to relieve the center bearings of the frame from strain.

A still further object of the invention is to so design the one-piece frame that a brake cylinder may be cast integral therewith.

Another object of the invention is to so design certain elements, which heretofore have been made separate, that they are cast integral with the frame.

In the accompanying drawings:

Fig. 1 is a diagrammatic side view of an articulated oil-electric locomotive made in accordance with my invention;

Fig. 2 is a plan view of the improved integral frame of the locomotive;

Fig. 3 is a side view;

Fig. 4 is a sectional view on the line 4—4, Fig. 3;

Fig. 5 is a sectional view on the line 5—5, Fig. 3;

Fig. 6 is a modification showing the depressed inner bumper;

Fig. 7 is a view showing the application of twin springs to the frame;

Fig. 8 is a view showing the application of a single spring mounted on the boxes and located on the inside of a box-type frame; and

Figs. 9 and 10 are views of modifications of the invention.

The body 1 of the locomotive is mounted on two frames 2—2, each frame being in the form of a truck, and the body of the locomotive rests on the center bearings 3 of the frames 2. Each frame has an outer bumper 4 at one end, having pockets 5 for the draft-gear and attachments. Formed in the bumper are polling pockets 6, and directly back of the bumper is the fulcrum 25 for the cross-equalizing beam. Sand-boxes 7 are cast integral with the frame, directly back of the outer bumper. At the opposite end of the frame is the inner bumper 8, having a draw-head 9, and in back of the bumper 8 are sand-boxes 10 cast integral with the frame. The face of each draw-head 9 is curved as at 11, and the draw-head of one frame abuts that of the adjoining frame, and the two frames are connected by a link 12 shown by dotted lines.

13 is a cross-tie forming an integral part of the frame, and this cross-tie has a center-bearing 14, on which rests the body of the locomotive. Formed integral with the cross-tie are the fulcrum brackets 15 for the brake mechanism and the suspension lugs 16 for the electric motors. Projecting upwardly from the frame are the side-bearings 17. The brake-cylinders 22 in the present instance are bolted on the frame, being partially enclosed within a pocket 18.

The side-frames 19—19, which connect the outer bumper, cross-tie and inner bumper, are provided with pedestals 20, and on the frame are located points of attachment for the driving spring links. The springs *a*—*a* shown in Fig. 7, are twin springs, one being on the outside of the frame and the other being on the inside of the frame. These springs are similar to those shown in the patent granted to John S. Keen, No. 1,530,373, dated March 17, 1925. In Fig. 8 the frame is made to accommodate single driving springs *b*, each spring being encased in a hollow frame and resting upon the boxes between the pedestals.

In Fig. 1 is shown the electric cells 21 suspended from the underside of the body of the locomotive at the center thereof, and in this instance the inner end of each frame is depressed as shown in Figs. 1 and 6, so as to clear these cells. The storage batteries are used to energize the generator, which is used as a motor to start the oil engine on the locomotive, and the storage battery is used also for lighting and for control circuits.

Figs. 9 and 10 illustrate a modification in

which the brake cylinders 22*a* are cast integral with the frame. Within the cylinders are bushings 23. In this instance the brake dead lever fulcrum 24 is an integral part of the cylinder head.

I claim:

1. The combination in an oil-electric articulated locomotive, of a body portion; two frames on which the body portion is pivotally mounted, each frame being made as an integral casting, one frame being coupled to the other and each frame having an outer and an inner draw-head, the inner draw-head and a portion of the frame being depressed; and storage batteries suspended from the body of the locomotive and occupying the space directly above the depressed portions of the frame.

2. The combination in an oil-electric articulated locomotive, of two frames connected together; axle box pedestals on the frames, each frame having a centrally located center bearing cross-tie; a body portion mounted above the two frames and having two center bearings mounted on the center bearings of the cross-ties of the frames, each frame having a bumper at each end, the outer bumpers extending beyond the body of the locomotive, the inner bumpers being in contact with each other, so as to have a rubbing action; and means connecting the inner ends of the two frames.

3. The combination in an oil-electric articulated locomotive, of two frames coupled together; a body portion having a center bearing mounted on each frame, each frame being made as an integral casting and having a bumper at each end; a center bearing cross-tie; and sand boxes at the four corners of the frame at the junction of the side members with the bumpers.

4. The combination in an oil-electric articulated locomotive, of two frames coupled together, each frame having a center bearing cross-tie; a body portion mounted above the two frames and having center bearings mounted on the center bearings of the cross-ties of the frames, each frame being made as an integral structure and having a bumper at each end, the inner bumpers being curved so the bumper of one frame will rub against the bumper of the other frame, each frame having integral side bearings, brake cylinder supports, and having at one end a fulcrum for a cross-equalizing beam.

5. A frame for an oil-electric locomotive made in a single casting and consisting of longitudinal side frames; an outer bumper and an inner bumper; a center bearing cross-tie on which the body of the locomotive is pivotally mounted; and a fulcrum for a cross-equalizing beam located directly back of the outer bumper.

CONRAD C. C. BURKHARDT.