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MOTOR VEHICLE FRAME

Filed April 16, 1926

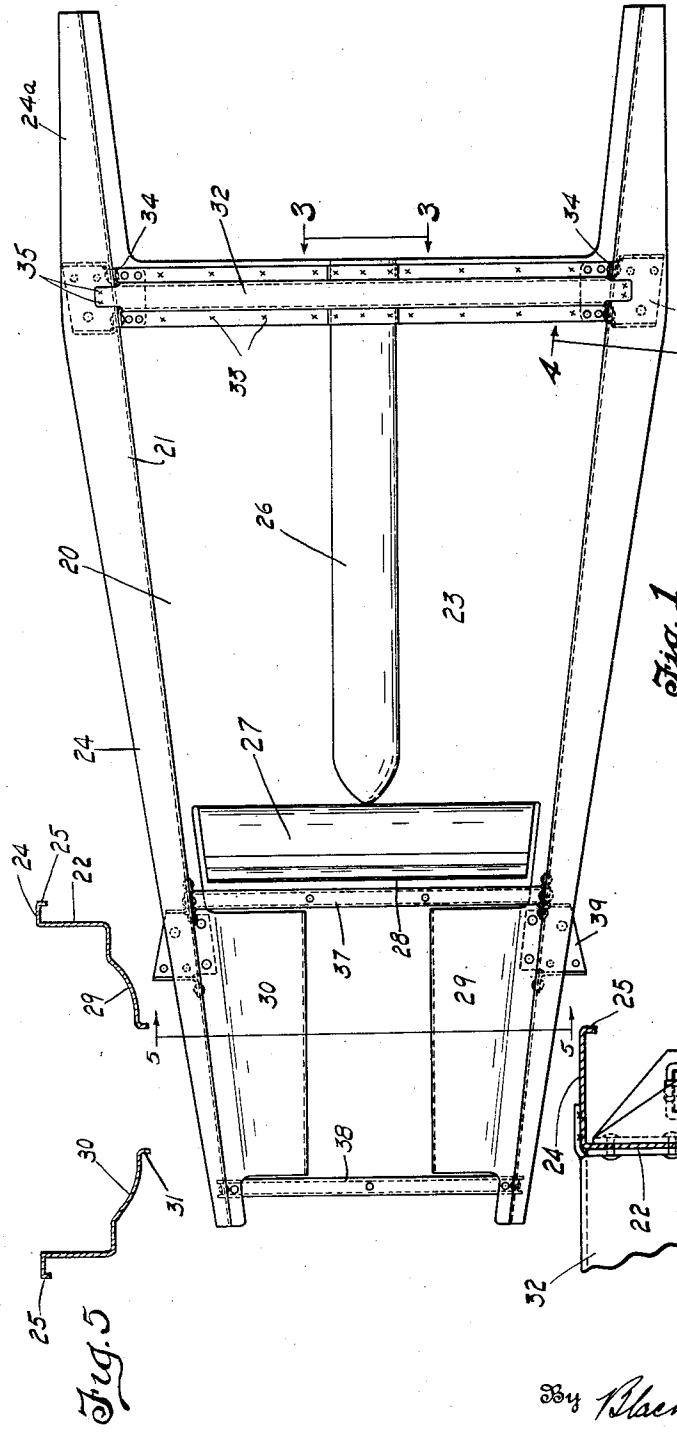



Fig. 1

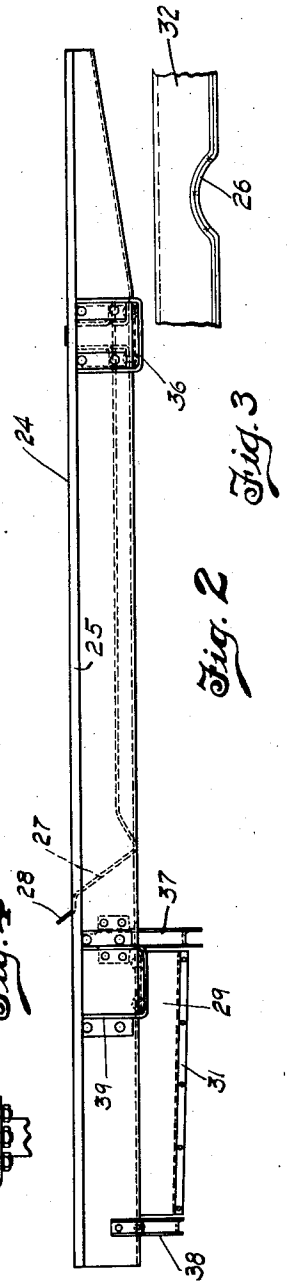



Fig. 2

Fig. 3

Fig. 4

Fig. 5

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# UNITED STATES PATENT OFFICE.

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## MOTOR-VEHICLE FRAME.

Application filed April 16, 1926. Serial No. 102,524.

This invention relates particularly to chassis frames for light motor cars.

The object of the invention is to cheapen and strengthen the construction of light cars, substituting for the floor of the body, as ordinarily constructed, a floor of sheet metal preferably integral with the side sills of the chassis frame.

The invention consists in the structure and combination of parts more specifically described hereinafter and illustrated in the accompanying drawings, in which:—

Fig. 1 is a plan view of a chassis frame made in accordance with this invention;

Fig. 2 is a side elevation thereof;

Fig. 3 is an elevation of a fragment viewed from the rear in the direction of the arrows 3—3;

Fig. 4 is a cross section on the line 4—4 of Fig. 1; and

Fig. 5 is a cross section on the line 5—5 of Fig. 3.

The main body of the chassis frame, indicated in the drawings by numeral 20, is pressed preferably from one sheet of wrought steel. In the press operation, longitudinal sills 21 are struck up, at the sides of the sheet, these sills trending fore and aft at an angle to each other, as is customary in chassis frames where the sills are separate members. The vertical sides 22 of the sills are preferably perpendicular to and extend above the floor 23 which connects the two sills. The top flanges 24 of the sills extend substantially at right angles to the sides 22 and the edges of the top flanges 24 are preferably turned downward slightly as at 25. The outer edges of top flanges 24 of the sills extend parallel with each other for a short distance at the rear of the frame as at $24^a$ adjacent to which the rear wheels would be located on a completed car.

Also formed in the press operation, there is, as indicated at 26, running longitudinally of the frame mid-way of the floor portion 23, an embossed ridge 26 convex above and concave beneath. Along the center of this embossed ridge, on the underside, the propeller shaft would extend in the completed vehicle. This embossed portion 26 assists in strengthening the floor longitudinally.

Forward of the embossed ridge 26, a member 27 is struck up from the sheet metal to form a foot board standing at an obtuse angle to the floor on its rearward side. This foot board terminates at the forward edge in a lip 28 which is offset from but substantially parallel with the body of said foot board. Through the foot board 27 the steering post would be extended in the completed vehicle.

Forward of the foot board are two wing-like members or aprons 29 and 30, pressed downward from the frame as shown to provide accommodation for the engine and associated parts and to close the space between the engine base and the sills. The wings or aprons 29 and 30 are formed by shearing the sheet longitudinally from the transverse edge of the opening from which the foot board 27 is struck up to the front end of the blank. A piece may be sheared out, if necessary, of such width as would leave aprons of such dimension as to bring their inner edges to the positions determined by the width and disposition of the engine. The aprons are thus integral with the frame only at their outer edges, leaving them free to yield to movements of the engine or frame and thus minimize the transmission of vibrations from one to the other. The aprons may be formed in a press with small expenditure of power because they are bent to shape and do not have to be drawn.

Rearward of the floor part 23 the metal has been removed so as to allow the side sill portions to project to the rear leaving an open space between them. In order to stiffen the frame near its rear end just over the points at which the rear springs would be attached to the sills, an inverted U-shaped cross beam 32 may be riveted or welded at opposite ends to the sides 22 of the sills. Said U-shaped beam has laterally extending flanges which may be riveted or spot welded as indicated at 33 to the floor 23; it is arched and fitted snugly over the embossed part 26. The ends of the beam may have flanges turned laterally from its side limbs as indicated at 34, through which, and the side walls 22 of the sills, as shown, rivets may be passed. Tongues left by the turning away of the flanges 34 may be riveted or spot welded as at 35 to the upper surface 24 of the sills. Opposite the ends of the beam 32, outside the sills, brackets 36 may be se-

cured, said brackets serving as seats for the springs. These brackets may be riveted to the sills by rivets which secure the ends of the beam 32.

Forward of the floor board are shown two engine supporting cross members 37 and 38. These may be of any suitable form. They are shown as channel shapes bowed downward, having their extremities riveted to the respective sills 21. Just forward of the engine cross support 37 on the exterior of the side sills, there may be supporting brackets 39 for front vehicle springs.

The construction described provides a floor and foot board on the chassis frame instead of in the vehicle body. It makes a strong construction suitable for light motor cars. It reduces the labor necessary to assemble a chassis frame as compared with ordinary construction and the main part of it is capable of being made by pressing operations, thus facilitating standardization in production. The frame is susceptible of ready and economical production since it may be pressed to the desired form from a sheet of steel without the expenditure of great power for the reason that the shaping is effected mainly by slitting and by bending each part to be shaped in parallel planes with the single exception of the fore and aft embossed portion 26 where the draft is light.

Although we have shown and described a particular embodiment of our invention in order to comply with the statute, it is to be understood that we do not intend to be limited to the specific construction shown, but only by the definitions of the appended claims.

What we claim is:

1. A wrought metal chassis frame for motor vehicles comprising side sills and a floor joining said side sills, said sills and floor constituting an integral one piece structure.

2. A wrought metal chassis frame for motor vehicles comprising side sills and a floor joining said side sills, said floor having a longitudinal embossed portion transversely convexed above and concaved beneath, said embossed portion stopping short of one end of said floor and serving to stiffen the latter.

3. A wrought metal chassis frame for motor vehicles comprising side sills and a floor joining said side sills, said floor having a struck up foot board extending transversely near its forward end.

4. A one-piece wrought metal chassis frame for motor vehicles comprising side sills and a floor joining said side sills, the sills extending both rearward and forward of the floor.

5. A wrought metal chassis frame for motor vehicles comprising side sills and a floor joining said side sills, the sills extending forward of the floor, and aprons integral with the forward extensions of the sills extending obliquely downward between them to bridge the space not occupied by the engine.

In testimony whereof we affix our signatures.

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