Sept. 30, 1958 E. JAULMES 2,854,249

FRAMES FOR AUTOCYCLES

Filed July 19, 1955 3 Sheets-Sheet 1

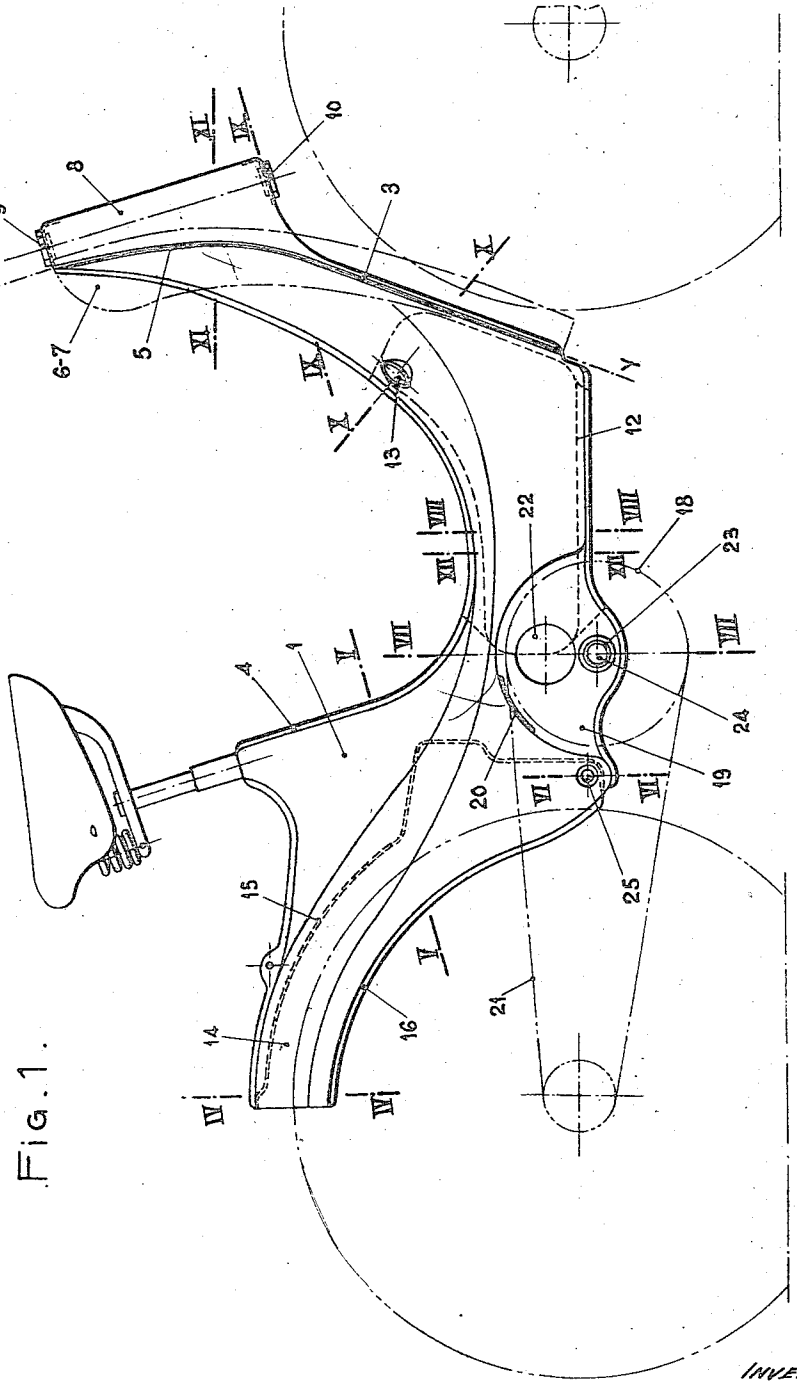


Fig. 1.

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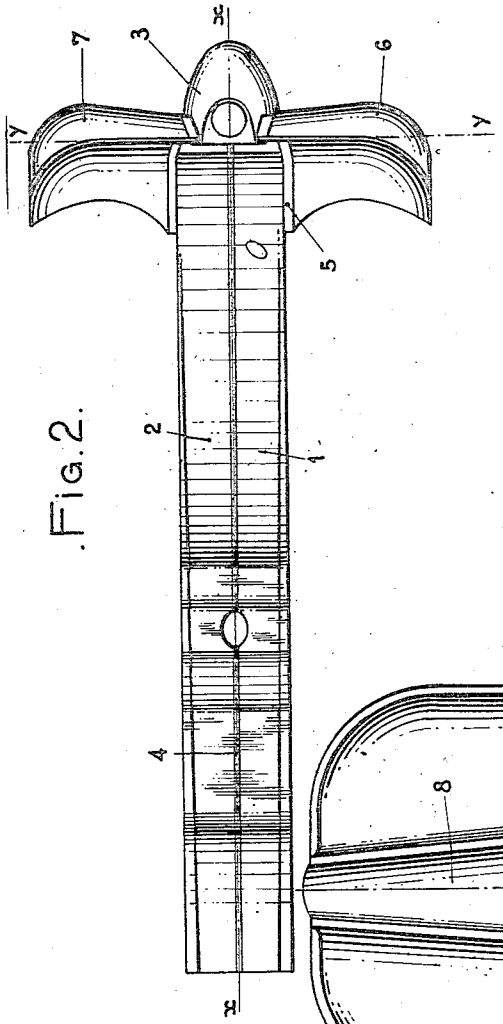


Fig. 2.

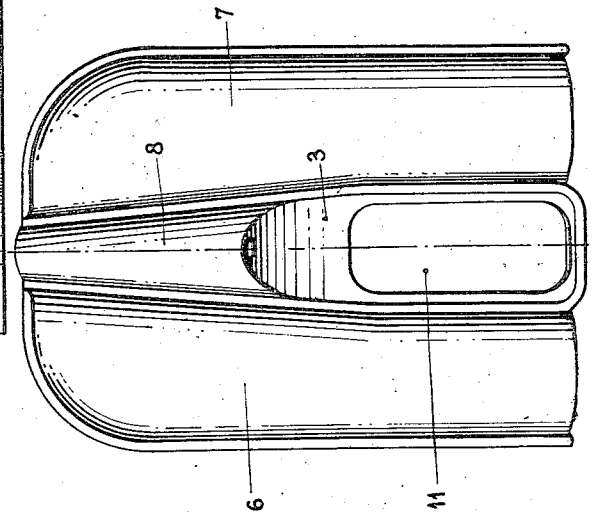


Fig. 3.

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Fig. 10.

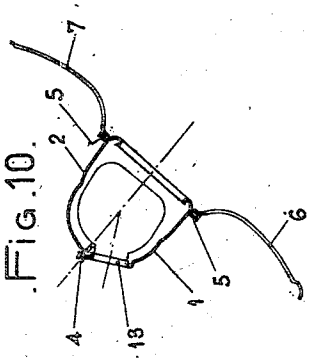


Fig. 11.

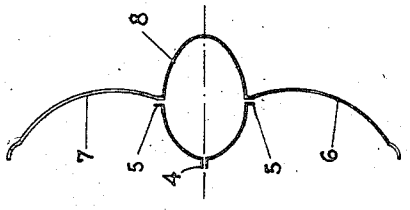


Fig. 9.

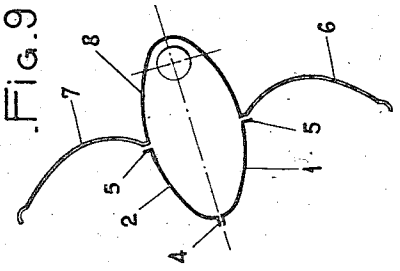


Fig. 7.

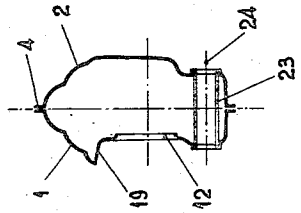


Fig. 8.

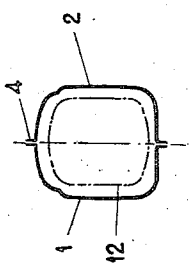


Fig. 12.

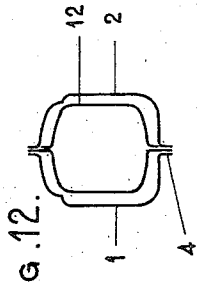


Fig. 4.

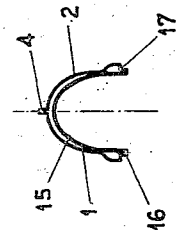


Fig. 5.

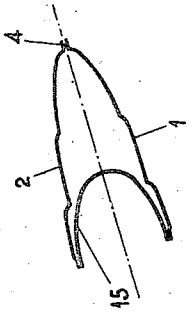
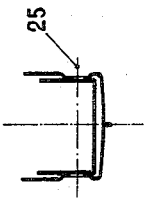


Fig. 6.



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2,854,249

FRAMES FOR AUTOCYCLES

Eric Jaulmes, Paris, France, assignor to Ateliers de la Motobecane, Société Anonyme Française

Application July 19, 1955, Serial No. 523,090

Claims priority, application France July 20, 1954

2 Claims. (Cl. 280—281)

The present invention relates to a shell frame for an autocycle, entirely made of pressed sheet metal. There are constructions already known of this kind, in which pressed components are associated with tubular components, particularly at the front part of the frame, where the front fork is connected and pivoted. This mixed construction is illogical and expensive, by reason of the many assembly operations which it necessitates.

There are known also "integral" shell frames formed effectively of two shell pieces joined on a central plane. The assembly is carried out by overlapping the edges and welding, a long and expensive manual operation. Here again, the troublesome part is the steering head, where the presence of a central joint compels the adoption of chance solutions. Not only is this joint unsightly, especially at this position, but if one wishes to smooth this joint by filing, the time taken leads to a prohibitive price.

The present invention remedies these troubles of integral shell frames, and permits a strictly industrial manufacture, all the welds being capable of being made electrically by seam welding. The shell frame produced according to the invention is very robust, and has a more finished appearance than those now known.

These advantageous results are obtained firstly, according to the invention, by the fact that the shell is made not of two but of three components, namely: two shell pieces joined on a central longitudinal plane, and a third front component or shield, joined to the two shell pieces on a transverse plane.

According to a further feature of the invention, both the two shell pieces and the shield are joined not by overlapping edges, but by means of a connecting lip or border the function of which is twofold. On the one hand, it permits the use of seam welding, systematically carried out, and on the other hand it contributes to the mechanical rigidity of the shell, having the added function of a stiffening fin.

It will be seen in this respect that precisely in the part of the shell where lateral rigidity predominates, that is to say at the front part affected by the steering, the plane of junction is disposed in the most favourable direction.

Further details and advantages of the invention will appear from the following description, given with reference to the accompanying drawings in which:

Figure 1 is a side view.

Figure 2 is a plan view.

Figure 3 is a front view.

Figures 4 to 12 show different sections of the shell frame in question, the sections being respectively on the lines IV—IV, V—V, VI—VI, VII—VII, VIII—VIII, IX—IX, X—X, XI—XI and XII—XII in Figure 1.

It will be seen that, according to the essential feature of the invention, the shell frame shown is formed of three principal components, namely the two shell pieces **1, 2** joined on a longitudinal central plane *x—x*, and a third

front component or shield **3**, itself joined to the two shell parts **1** and **2** on a transverse plane *y—y*.

The assembly is brought about by connecting lips or borders **4, 5** permitting electric seam welding. It will be seen that these borders form, after assembly, a central continuous fin which makes a useful contribution to the mechanical rigidity of the shell, as has been said above.

Further according to the invention, the shell frame is completed by the two leg shields **6, 7**, suitably bowed and secured by using precisely the connecting border **5** between the two shell pieces on the one hand and the shield on the other hand. It will be appreciated that these leg shields take part effectively, in these conditions, in the transverse rigidity of the shell frame.

A further feature of the invention consists again in the fact that the front shield **3**, the general shape of which is that of a strip of sheet metal with side edges substantially parallel, includes at its upper part a deep depression indicated at **8**, the parallel upper and lower bounding walls of which, respectively indicated at **9** and **10**, are used for mounting the locating sleeves of ball bearing rings for the steering pillar. A great simplification is thus introduced into the construction and assembly, as compared with present designs, while ensuring very great solidity for this part of the cycle.

It will be seen that the lower part of the shield **3** includes an opening **11** of substantial dimensions, naturally capable of being closed by a door if required, which permits insertion into the interior of the frame of the fuel tank **12**, shown in broken lines in Figure 1, a tank of which the filler cap is indicated at **13**. This tank may then be put in place after finishing of the assembly of the shell frame. Being completely invisible, it may remain rough as made and, being perfectly protected, it may be of very light construction, which facilitates the pressing of its constituent parts. It is even possible to consider the use of a tank made of a plastic, and even with flexible walls of the "skin" type.

This shell frame is further characterized by the fact that it includes a rear extension **14**, reaching practically to the line of the axis of the rear wheel. To this extension there may be connected for example, preferably while conforming to the general lines of the whole, the rear mudguard, a luggage carrier, and even the support for a pillion seat. It is thus called on to support a fairly substantial load, and is thus strengthened, according to the invention, by an internal wall **15** joined by its longitudinal edges to the lateral lips or borders **16, 17** of this extension, so as to convert this part of the shell frame into a closed tubular beam, of great strength. The reinforcing internal wall **15**, in the form of a trough, takes substantially the form of a normal mudguard.

It will be seen that the right-hand shell piece **1**, to which corresponds the chain wheel of the pedal assembly **18**, forms in its lower part a recess **19** coaxial with the pedal assembly, in which this chain wheel lies, being thus contained within the outline of the machine. An opening **20** is made in the wall of the recess **19**, to allow the passage of the upper run **21** of the chain, which is completely screened and protected by the corresponding part of the shell piece **1**, acting in place of the usual chain case. The general streamlining of the machine is thus improved.

There is indicated at **22** a lightening opening made in the base of the recess **19**.

The bearing case **23** for the pedal assembly serves, according to the invention, the additional purpose of a strengthening tie between the two shell pieces to which it is connected by its two ends.

The shaft **24** of the bearing case is received in bearing case **23** and is ahead of the pivot axis **25** of the hori-

zontal rear fork carrying the rear wheel, which is of the spring type in the autocycle described and shown.

The different sections in Figures 7 to 11 make clear the shapes adopted for the shell frame, more for decorative purposes than for practical needs. However, the fins thus formed contribute in part to the rigidity of the whole.

It will be appreciated that the shell frame according to the invention, formed solely of three pressed components, lends itself perfectly to a strictly industrial manufacture, in which all hand operations are practically eliminated, especially due to the almost exclusive use of seam welding.

This frame may easily receive the aerodynamic lines at present in favour. Its painting or enamelling, and also its maintenance by the user, are rendered very easy by the fact that it has no reentrant angle.

Of course, the drawings only show a frame given simply by way of illustration. Very substantial modifications could be made to the shapes of the three components which form it, without in any way departing from the invention.

The fuel tank may, itself, contribute to the rigidity of the frame, if it is made of sheet metal of suitable thickness. In its preferred form of construction, this tank is also made of two shell pieces joined in a central vertical plane, coinciding with the plane of junction of the two shell pieces of the shell frame, and the connecting lips or borders of one of the two shell pieces forming the tank may then be made wider than those of the other shell piece, so as to come between the connecting lips or borders of the two shell pieces of the shell frame, so as to be joined there in the course of the same seam welding operation. Figure 12 shows such an assembly. The opening **11** in the shield **13** then becomes unnecessary.

I claim:

1. Shell frame for an autocycle, formed by three principal prepared components, namely: two side shell pieces joined on a central longitudinal plane, and a third front component or shield, itself joined to the two shell pieces on a transverse plane, but of reinforced construction, in which the fuel tank takes part in the strength of the whole, said tank being itself made of two shell pieces, joined on a central vertical plane coinciding with the plane of junction of the two shell pieces of the shell frame, the connecting border or lip of one of the shell pieces of the tank being made wider than the border of the other shell piece, so as to come between the connecting lips or borders of the two shell pieces of the shell frame, so as to be joined there in the course of the same seam welding operation.

2. Shell frame for an autocycle, formed by three principal prepared components, namely: two side shell pieces joined on a central longitudinal plane, and a third front shield, itself joined to the two shell pieces on a transverse plane, the front shield receiving by itself the steering means, and comprising a socket which socket projects forwardly and is directed approximately vertically and terminates at the top and at the bottom in horizontal walls adapted to receive ball bearing rings for guiding the steering post.

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