Sept. 21, 1926. 1,600,511

H. S. PIERCE ET AL

TOP CONSTRUCTION

Filed Jan. 7, 1925

FIG. 1

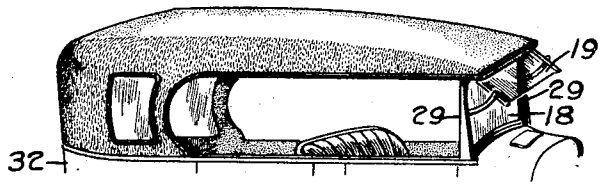


FIG. 2

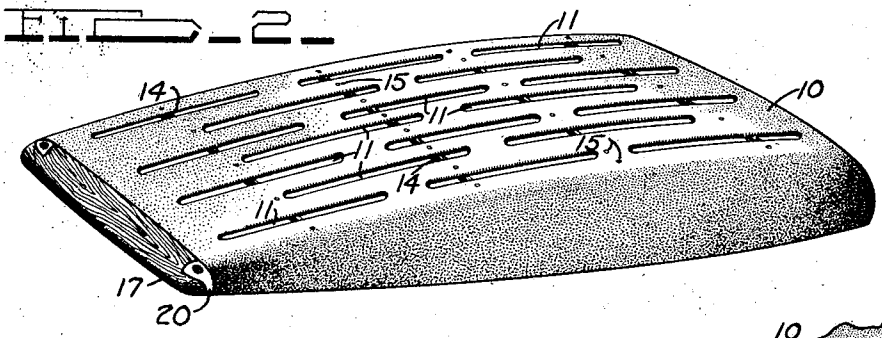


FIG. 3

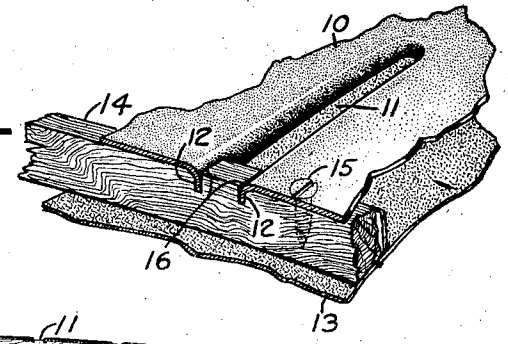
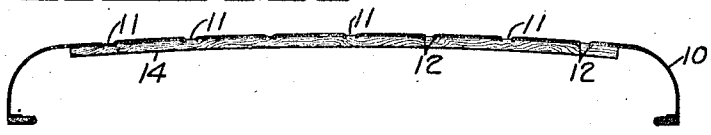


FIG. 4



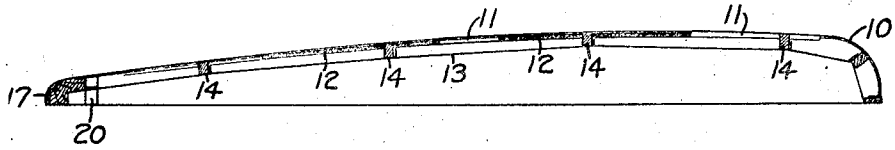


FIG. 5

INVENTORS
HODGSON S. PIERCE
JOSEPH H. BOURGON
BY R. T. Bowersox
ATTORNEY

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UNITED STATES PATENT OFFICE.

HODGSON S. PIERCE AND JOSEPH H. BOURGON, OF DETROIT, MICHIGAN, ASSIGNORS TO THE STUDEBAKER CORPORATION, OF SOUTH BEND, INDIANA, AND DETROIT, MICHIGAN, A CORPORATION OF NEW JERSEY.

TOP CONSTRUCTION.

Application filed January 7, 1925. Serial No. 1,041.

This invention relates to tops for motor vehicles and the like and particularly to tops of the permanent type, and has for one of its objects to provide a top of novel and improved construction, the main portion of which is composed of sheet metal to make it strong and durable, and to which the various other top members and adjuncts may be applied to form a permanent unitary structure.

Another object is to provide a top frame constructed from a continuous sheet of metal of such a construction that the top of which it forms a part will not be subject to the "drumming" or "crackling" usually associated with metal tops.

Another object is to provide a sheet metal top frame with a plurality of longitudinally extending relatively long and narrow slots or openings in the upper surface thereof.

Another object is to provide a top frame constructed from a continuous sheet of metal which is provided with a plurality of relatively long and narrow slots or openings in the upper surface thereof extending lengthwise of the top, the metal at the edge of such openings displaced in the operation of forming the same being bent downwardly to form stiffening flanges.

Another object is to provide a top as described above in which the relatively long and narrow openings are spaced in overlapping position transversely of the top.

Another object is to provide an automobile top frame constructed mainly from sheet metal being provided with a metallic brace member to which the sheet metal is secured and which forms a connection for a wooden frame front cross member.

The above being among the objects of the present invention, the same consists of certain features of construction and combination of parts to be hereinafter described with reference to the accompanying drawings, and then claimed, having the above and other objects in view.

In the accompanying drawings which illustrate a suitable embodiment of the present invention, and in which like numerals refer to like parts throughout the several views.

Figure 1 is a perspective view of a completed top constructed in accordance with the present invention shown mounted upon an automobile body.

Figure 2 is a perspective view of a top frame constructed in accordance with the present invention, which may be used in connection with the completed top shown in Figure 1.

Figure 3 is an enlarged fragmentary perspective view of a portion of the top frame of Figure 2, showing the top inner lining secured in place.

Figure 4 is a transverse section of the top frame of Figure 2, showing a transverse rib member in place and the side rails or top covering tacking strip in place, the top inner lining being omitted.

Figure 5 is a longitudinal sectional view of the top illustrated in Figure 2, showing the top inner lining in place therein.

The top frame as shown in Figure 2, which is an improvement of top frames heretofore used, is formed preferably from a single continuous sheet of metal into the desired shape and contour, but in the following description and claims which may refer to the top frame as being constructed from a continuous sheet of metal, it will be kept in mind that the present invention is not limited to a metal top frame which is constructed from a single sheet of metal, as it is applicable to and includes those constructions where the same are made up of a plurality of units welded, riveted or otherwise suitably secured together to form a continuous sheet, and has the same practical results and effects as a frame constructed from a single sheet.

Top frames constructed from a continuous sheet of metal have had but a limited use in the past due to the fact that these early designs had a tendency to vibrate in unison, to a highly objectionable degree, with other vibrations present in the automobile of which they formed a part, or with the explosions of the engine, in much the same way that a drum head may be made to vibrate in sympathy with independent vibrations. Another great objection to the former tops occurred when the top was distorted or by "weaving" as the automobile of which it formed a part traveled over rough or uneven surfaces, because of stresses of various characters being set up in the

metal with the resulting tendency for the metal to temporarily change its shape, which frequently caused snapping or crackling sounds much the same as are produced upon pressing the bottom of an oil can. In the present invention such disadvantages and objections as appeared in the former type of top have been eliminated and a structure is provided which will prevent flexibility with the body but not lose the advantage of a permanent top.

As mentioned above the metal of the top, which provides a top frame 10, is formed from a continuous sheet into the desired shape and contour, that is, to the shape of tops as shown in Figures 1 and 2, or otherwise, but preferably such that no flat spots are present anywhere on its surface to better eliminate any drumming sound that may develop.

To further prevent any drumming and to prevent any crackling sounds, a plurality of relatively long and narrow slots 11 extending lengthwise of the top are provided in the upper surface thereof. These slots 11 are preferably in overlapping relation transversely of the top and the metal displaced in the forming of the same is preferably turned downwardly perpendicular to the plane of the top to form a stiffening flange or rib 12 as best shown in Figure 3. The openings 11 have the same effect in preventing the drumming of the top as similar openings cut in a drum head would have upon the drum. In addition, particularly when the slots 11 are overlapped as shown, a great amount of flexibility is imparted to the top which allows it to weave without setting up the distortional stresses responsible for the crackling sounds which have heretofore been present in metal tops. By turning down the metal at the edge of the openings to form the flanges 12, the strength of the top perpendicular to its upper surface is decreased little, if at all, by reason of the openings 11, but to further strengthen it in this direction and to provide tacking strips for the top inner lining 13 it may be preferable to provide ribs such as 14 which extend transversely of the top and are secured thereto by screws 15. The ribs 14 are preferably of wood and slots 16 are provided in the upper surface thereof to receive the flanges 12 so that the ribs 14 may seat tightly against the inner surface of the metal frame 10. The ribs 14 may be secured in place either across the overlapping portion of the slots 11, or across the non-overlapping portion as may be considered most advisable.

A wooden front cross member 17 is preferably used to facilitate the securing of the windshield 18 and rainshield 19 thereto, although if desired a sheet metal or other type of cross member may be substituted. In order to properly hold the same in place, a connecting member 20 is provided as shown in Figures 2 and 5. This connecting member 20, as shown, may be a casting, although it may be produced in a different manner such as from stampings, and is shaped to form an attaching flange for receiving and to which is riveted the forward outer edge of the sheet metal frame 10.

While we have illustrated a top adapted for use on an open type vehicle, it will be readily understood that this construction is adapted for use on "closed" type vehicles, and that a top frame having slots extending longitudinally thereof and having an equivalent front cross member forming a part of the top connected to the frame of the top by a similar connecting member may be used with equal advantage to the structure illustrated.

Formal changes may be made in the specific embodiment of the invention described without departing from the spirit and substance of the broad invention, the scope of which is commensurate with the appended claims.

What we claim is:—

1. In a motor vehicle, a top frame formed from a continuous sheet of metal having a plurality of rows of longitudinally extending slots therein, the metal displaced in the forming of said slots being bent downwardly about the edge of said slots to form slots of greater depth than the thickness of the metal, and ribs secured to the under side of said frame extending transversely thereof, said ribs extending into said slots to lie substantially flush with the under side of said frame.

2. A vehicle top frame having a sheet metal roof portion, said roof being provided with a plurality of longitudinally extending relatively long and narrow openings therein, the metal displaced in the forming of said openings being bent downwardly to form flanges about the edge of said openings, ribs extending transversely of said top and secured thereto, said ribs having slots therein to receive said flanges, the upper face of said ribs being flush with the underside of said frame.

3. A vehicle top frame constructed from a continuous sheet of metal, the upper portion of said frame having a plurality of rows of longitudinally extending long and narrow openings therein, the openings in each row overlapping the openings in the adjacent row, and the metal displaced in the forming of said openings being bent downwardly about the edge of said openings to truss said frame against longitudinal strains.

4. A vehicle top frame having a continuous sheet metal top portion, said portion having a plurality of elongated openings

therein, lying longitudinally of said frame and spaced in overlapping relation transversely of said frame.

5. A vehicle top frame having a sheet metal top portion provided with a plurality of longitudinally extending relatively long and narrow transversely overlapping openings therein, and ribs secured to the underside thereof transversely of said frame across the overlapping portion of said openings, said ribs extending into said openings.

Signed by us at Detroit, Michigan, U. S. A., this 31st day of December, 1924.

HODGSON S. PIERCE.
JOSEPH H. BOURGON.