

Nov. 21, 1939.

R. G. LE TOURNEAU

2,180,830

STEEL BUILDING PANEL

Filed Jan. 7, 1938

Fig. 1

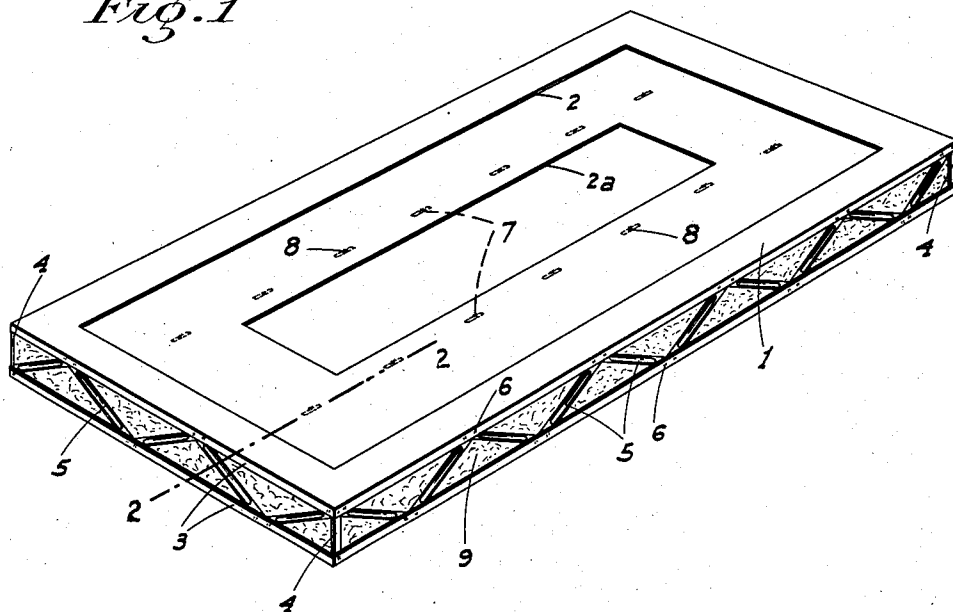
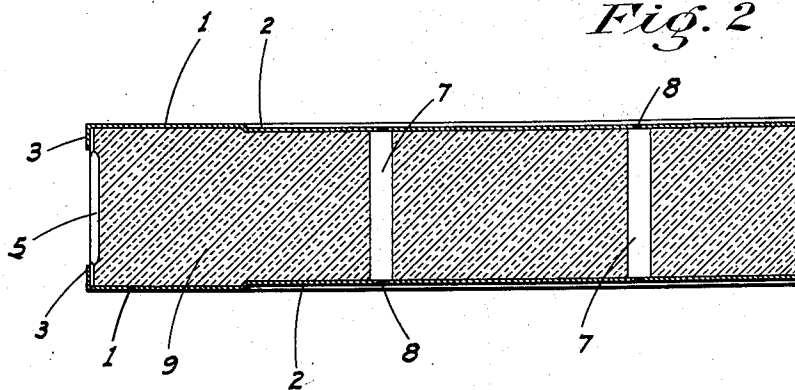


Fig. 2



INVENTOR

R. G. LeTourneau

BY

George J. White

ATTORNEY

UNITED STATES PATENT OFFICE

2,180,830

STEEL BUILDING PANEL

Robert Gilmore Le Tourneau, Peoria, Ill., assign-
or to R. G. Le Tourneau, Inc., a corporation of
California

Application January 7, 1938, Serial No. 183,819

2 Claims. (Cl. 189—34)

This invention relates generally to building panels and in particular the invention is directed to a pre-fabricated metal building panel adapted for use in the construction of metal buildings.

The principal object of this invention is to provide a pre-fabricated building panel which is constructed so as to reduce heat transfer there-through to a minimum. One of the problems arising from the use of metal building panels has been the undesirable heat loss through the metal and to overcome such problem I have provided the metal building panel as hereinafter specifically described.

A further object of the invention is the provision of a metal building panel which is exceedingly strong as well as simple and inexpensive, and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawing similar characters of reference indicate corresponding parts in the several views:

Figure 1 is a perspective view of a pre-fabricated metal building panel constructed according to the present invention.

Figure 2 is an enlarged and fragmentary longitudinal section of such panel taken on line 2—2 of Fig. 1.

Referring now more particularly to the characters of reference on the drawing, my improved metal building panel comprises a pair of rectangular metal plates disposed in face to face relation but spaced apart a substantial distance, the spacing usually approximating six inches. The plates 1 are preferably stamped as at 2 and 2a to form rectangular and symmetrical depressed portions which not only strengthen the plates but also enhance their appearance.

Relatively narrow flanges 3 extend inwardly from the periphery of each plate 1. Metal corner posts 4 extend between the flanges at corresponding corners of the plates, while metal connecting straps 5 are arranged in alternating relation between the corresponding flanges 3 of both the sides and ends of the plates 1 whereby to provide a bracing truss between the plates on both sides and ends. The corner posts 4 and straps 5 are relatively narrow and are secured to the inner faces of the flanges by spot welding as at 6. The straps 5 are deformed by stamping so as to be of concavo-convex or trough-like form in cross section for substantially their full length between the flanges 3, the deformation being inwardly relative to the outer or flange engaging faces of the straps, as plainly shown in Fig. 2. In this manner, the straps may be quite thin and small while having ample strength to resist buckling or warping. At the same time a flat

face to face contact is had with the flanges to which they are spot welded—a convenient form of welding which could not be employed if the straps were transversely curved from end to end. Also, the curvature or deformation being inwardly of the flange engaging faces of the straps, it does not project so as to interfere with the abutting of adjacent panel edges with each other.

Other connecting straps 7 extend between the plates 1 at substantially right angles thereto, such straps 7 being disposed in laterally spaced rows which extend lengthwise of the plates intermediate the side edges thereof. Straps 7 butt against the inner face of the plates and are spot welded thereto as at 8.

The panel constructed as above is completely filled with an insulating material 9 such as mineral wool, spun glass or other similar insulating medium now available on the market.

The insulating material 9 between the plates 1 effectively prevents heat transfer through the panel as the plates are spaced apart with the insulation therebetween, the only source of heat conduction between the plates being the straps 4, 5 and 7 and as they are of small area—in total—at the point of contact with the flanges or plates, the conduction of heat therethrough is nominal. The pre-fabricated metal panel is thus quite satisfactory and heat loss therethrough does not constitute a problem as heretofore.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

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

1. A metal building panel including, in combination, a pair of plates disposed in facing but spaced relation, flanges about the panels projecting toward but terminating short of each other, said flanges being disposed at the extreme edges of the panels whereby adjacent panels may be abutted with corresponding flanges in face to face contact, and connecting straps fixed adjacent their ends on and extending between corresponding flanges; the exterior surface of said straps being disposed within the plane of the exterior surface of said flanges.

2. A device as in claim 1 in which the straps intermediate the flanges are each formed with an inwardly deformed, longitudinal portion whereby to strengthen the straps.

ROBERT G. LE TOURNEAU.