Aug. 15, 1933. P. J. MAUL ET AL 1,922,774

MOLDED BLOCK

Filed May 14, 1931 2 Sheets-Sheet 1

Fig. 1.

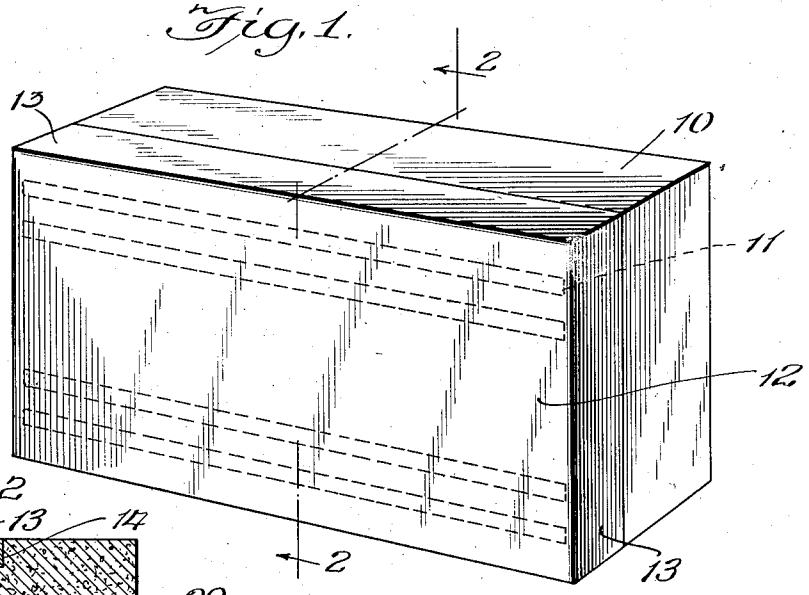


Fig. 2

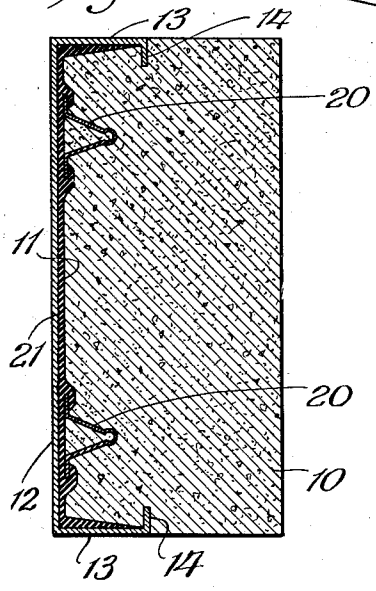


Fig. 3.

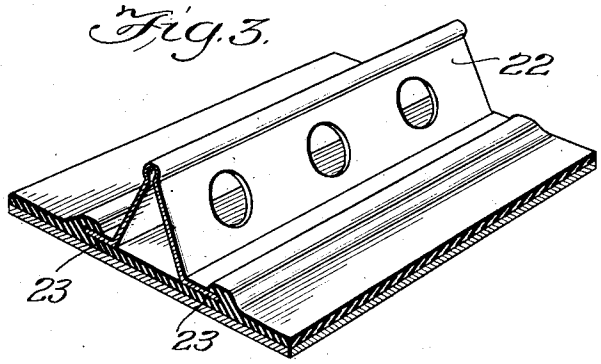
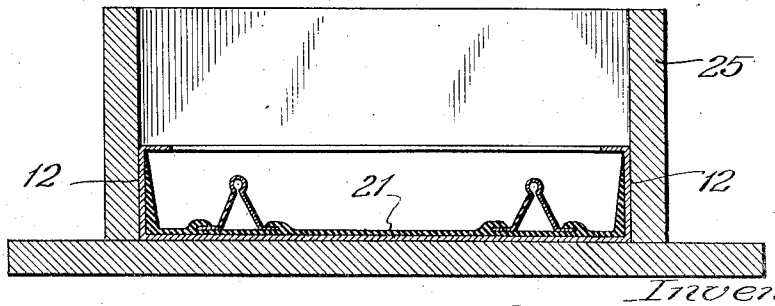


Fig. 4.



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Fig. 5.

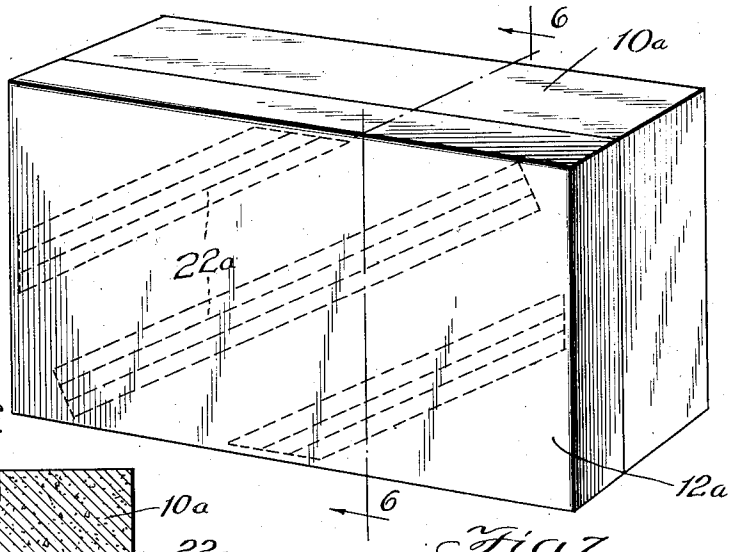


Fig. 6.

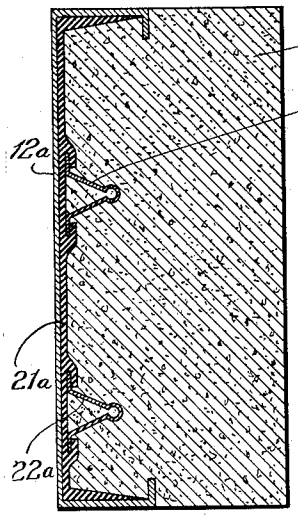


Fig. 7.

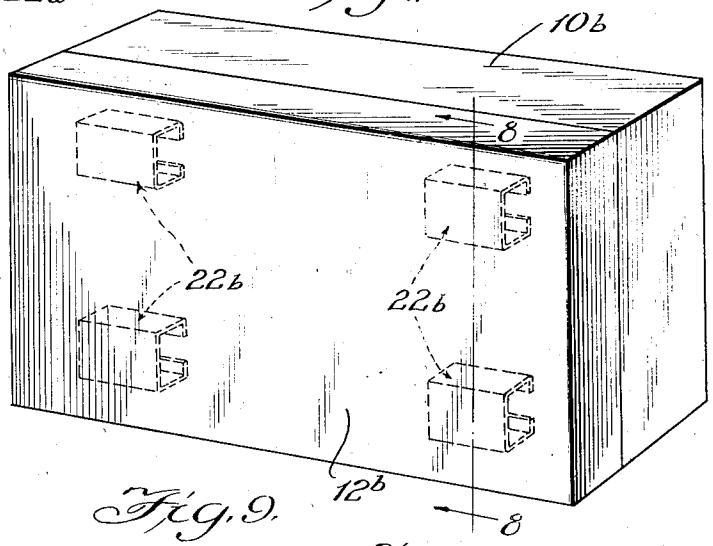


Fig. 8.

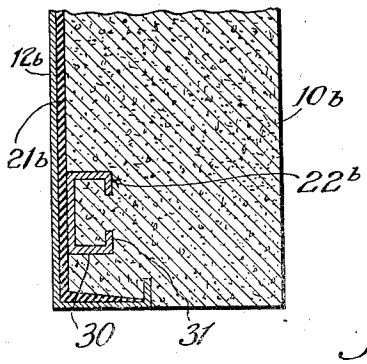
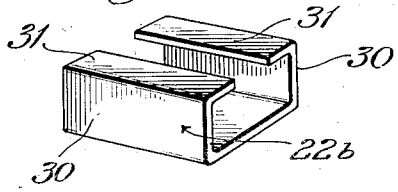


Fig. 9.



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UNITED STATES PATENT OFFICE

1,922,774

MOLDED BLOCK

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Application May 14, 1931. Serial No. 537,426

6 Claims. (Cl. 72—35)

The invention relates to molded blocks, and is particularly adapted to be embodied in concrete blocks, etc., employed in building construction, fences, lamp-posts, monuments, or the like.

One form of the invention comprises a block which preferably consists of a body portion formed from a mixture of cementitious material and an aggregate, the aggregate being preferably porous burned shale which has a cellular structure. One surface of the block is entirely covered by a sheet of metal which has rearwardly extending flanges that have portions embedded in the body portion of the block. Secured to the inner surface of the sheet metal are a plurality of fastening and re-enforcing devices which have portions embedded in the body portion of the block. The fastening and re-enforcing devices are secured to the sheet metal by an adhesive substance, preferably asphalt.

The fastening and re-enforcing devices are preferably formed from metal. When they are secured to the sheet metal facing of the block by adhesive, as described above, it is not necessary to weld or rivet them to the sheet metal and, therefore, the sheet metal is not distorted or discolored. The block presents a pleasing appearance as the sheet metal may be oxidized if it is so desired, or it may be made from some material such as stainless steel or Allegheny metal which does not tarnish when it is subjected to atmospheric conditions.

The fastening and re-enforcing devices may be of any suitable shape and size. In some instances they extend along the entire inner surface of the sheet metal and, therefore, tend to prevent it from buckling. In other instances, the fastening and re-enforcing devices merely comprise relatively small members which are secured at various points to the inner surface of the sheet metal by the adhesive substance.

Other advantages of the invention will become apparent as the following detailed description progresses, reference being had to the accompanying drawings, wherein:

Figure 1 is a perspective view of a block which embodies the invention;

Fig. 2 is a section taken on line 2—2 of Fig. 1;

Fig. 3 is a fragmentary perspective view of a fastening and re-enforcing device employed in the block shown in Figs. 1 and 2, the fastening and re-enforcing devices being shown in connection with a portion of the sheet metal facing which forms part of the block shown in Figs. 1 and 2;

Fig. 4 is a section taken through a mold and illustrates a preferred method of producing the blocks shown in Figs. 1 and 2;

Fig. 5 is a perspective view of a block embodying another form of the invention;

Fig. 6 is a section taken on line 6—6 of Fig. 5;

Fig. 7 is a perspective view of a block which embodies still another form of the invention;

Fig. 8 is a fragmentary section taken on line 8—8 of Fig. 7; and

Fig. 9 is a perspective view of a re-enforcing and fastening device forming part of the block shown in Figs. 7 and 8.

Referring for the present to Figs. 1 to 3, inclusive, wherein a preferred embodiment of the invention is illustrated, the reference character 10 designates, generally, the body portion of the block, which body portion 10 has one of its surfaces 11 entirely covered by a sheet metal panel 12.

The body portion 10 may be made of any suitable plastic material, but is usually formed from concrete. In the preferred embodiment of the invention, the body portion 10 comprises a mixture of cementitious material and an aggregate which is preferably a burned porous shale having a cellular structure. A body portion formed of these materials is relatively light in weight and is also highly fire proof as the aggregate or shale does not calcine when subjected to high temperatures.

As best shown in Fig. 2, the sheet metal panel 12 has integral rearwardly extending flanges 13 along all of its edges, the ends of the flanges 13 being bent inwardly to provide flanges 14 which are embodied in the body portion 10.

Embedded in the body portion 10 are fastening and re-enforcing devices 20 which are preferably secured to the sheet metal panel 12 by an adhesive substance. The adhesive substance is preferably asphalt. It will be noted that a coating 21 of asphalt covers substantially the entire inner surface of the sheet metal panel 12.

The re-enforcing members 20 are preferably formed from sheet metal and are preferably formed to provide apertured portions 22 adapted to be embedded in the body portion, the apertured portions 22 having outwardly extending flanges 23 formed integral therewith and adapted to be embedded in the coating 21.

In the preferred embodiment of the invention, the re-enforcing members 20 are relatively long and extend substantially along the entire inner surface of the sheet metal panel 12.

Fig. 4 illustrates the method which is preferably practiced to produce blocks embodying the

invention. As shown, a mold 25 is provided and the sheet metal panel 12 is preferably placed face down in the bottom of the mold. The layer 21 of asphalt is then poured upon the inner surface of the sheet metal panel 12. In one embodiment of the invention, the asphalt is heated and applied in a semi-liquid state. In another embodiment of the invention a preparation, known as emulsified asphalt, is employed, the emulsified asphalt being usually a mixture of asphalt and a thinner. This mixture may be applied to the inner surface of the panel 12 while cold.

After the layer 21 of asphalt has been poured into the panel 12 to provide the coating, the re-enforcing members 20 are inserted in the panel and are pressed down into the coating so that the flanges 23 become embedded therein. Then after the coating 21 has set or hardened, the plastic material is poured into the mold to form the body portion 10. After the plastic material has set the completed block may be removed from the mold.

Another form of the invention is illustrated in Figs. 5 and 6. The block shown in Figs. 5 and 6 has a body portion 10*a*, which is preferably identical in construction with the body portion 10 described above, the body portion 10*a* being provided on one face with a sheet metal panel 12*a*, which is identical with the sheet metal panel 12. The inner surface of the sheet metal panel 12*a* is provided with a coating 21*a* of adhesive material, preferably asphalt. A plurality of re-enforcing and fastening devices 22*a* are secured to the inner surface of the sheet metal panel 12*a* by the coating 21*a* and have portions embeded in the body portion 10*a*. It will be noted that the re-enforcing members 22*a* are substantially identical in construction with the re-enforcing members 22, but are arranged diagonally of the sheet metal 12*a* instead of longitudinally thereof.

Still another form of the invention is illustrated in Figs. 7, 8 and 9, wherein a block is shown comprising a body portion 10*b*, a sheet metal panel 12*b* and a plurality of re-enforcing members 22*b*. The sheet metal member 12*b* is preferably identical in construction with the sheet metal member 12, described above, and is provided with a coating 21*b* of an adhesive substance, preferably asphalt, on its inner surface.

As best shown in Fig. 9, each re-enforcing member 22*b* is preferably formed from sheet metal and is bent to form rearwardly extending flanges 30 with inturned ends 31, the flanges 30 and the ends 31 being embedded in the portion 10*b* entering the mold or casting process. The fastening and re-enforcing devices 22*b* are partially embedded in the coating 21*b* which adheres thereto and also to the inner surface of the sheet metal 12*b* so that spaced portions of the sheet metal are securely fastened to the body portion. This tends to prevent buckling of the sheet metal when it is subjected to changes in temperature.

As set forth above, a particular object of the invention is that the fastening and re-enforcing members secure the central portions of the sheet metal to the concrete in such manner that they tend to prevent concrete in such manner that they metal when it is subjected to changes in temperature. The fastening and re-enforcing devices are secured to the sheet metal in such manner that it is not necessary to rivet or weld them thereto. The exposed surface of the sheet metal is then left unmarred.

One advantage of the invention is that the back surfaces of the sheet metal panels or facings are entirely covered so that moisture can not condense thereon and cause corrosion of the metal.

While we have shown and described certain embodiments of our invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claims, in which it is our intention to claim all novelty inherent in our invention as broadly as possible, in view of the prior art.

What we claim as new, and desire to secure by Letters Patent, is:

1. A block of the character described comprising a body portion formed from plastic material, a sheet metal panel covering a surface of the block, and fastening means secured to the sheet metal by adhesive and having portions embedded in the body portion.

2. A block of the character described comprising a body portion formed from plastic material, a sheet metal panel having flanges embedded in the body portion, a coating of adhesive material on the inner surface of the sheet metal panel, and a fastening device secured to the sheet metal by said coating and having a portion embedded in said body portion.

3. A block of the character described comprising a body portion formed from concrete, a sheet metal member covering one surface of the block, and fastening devices secured to said sheet metal by adhesive and having a portion embedded in said body portion.

4. A block of the character described comprising a body portion formed from plastic material, a sheet metal panel covering a surface of the body portion, and means re-enforcing said sheet metal, said re-enforcing means comprising a member secured to said sheet metal by adhesive.

5. A block of the character described comprising a body portion formed from plastic material, a sheet metal panel covering a surface of the body portion, and means re-enforcing said sheet metal, said re-enforcing means comprising a member secured to said sheet metal by asphalt.

6. A block of the character described comprising a body portion formed of plastic material, a sheet metal panel covering a surface of the block, a coating of adhesive material between said sheet metal panel and said surface, and metallic fastening devices embedded in said body portion and said coating of adhesive material.

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