May 20, 1969 L. MOSS 3,445,083

FLOOR MAT

Filed Feb. 9, 1967

FIG. 2

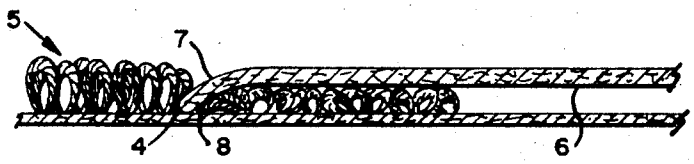
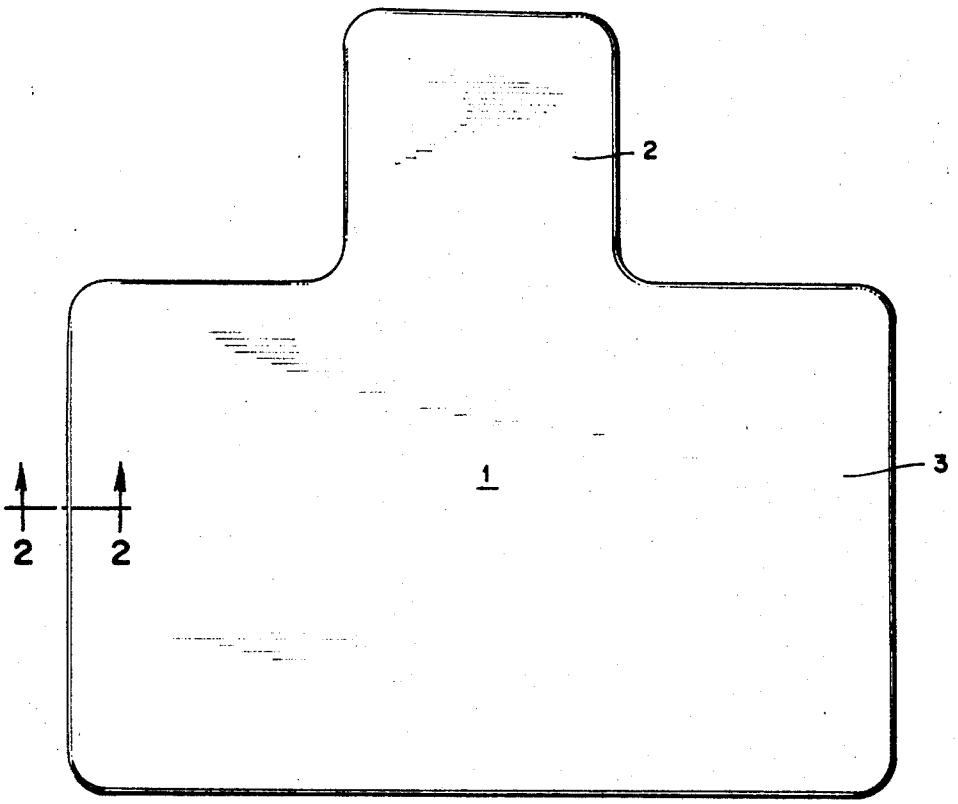


FIG. 1



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FLOOR MAT

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ABSTRACT OF THE DISCLOSURE

A floor protecting flat mat having a downwardly curved peripheral edge that extends at least partially below the bottom surface of the mat, for placement in heavy wear areas or under furniture.

BACKGROUND OF THE INVENTION

Field of the invention

This application relates to a mat for use under chairs to protect the flooring material on which the chair is located, and more particularly, to a chair mat having improved characteristics with regard to edge configuration and movement when used on carpeting.

Description of the prior art

Chair mats as previously known have generally been formed of a flat piece of pressed board, rubber, or plastic shaped to protect flooring material in a particular location and have been provided with a rounded peripheral edge. The type of edge which was commonly associated with such mats is called "bullnose." This type of edge is rounded at the top and bottom of the mat to form essentially a half circle, with the center of the circle equidistant from the top and bottom surfaces of the mat.

Chair mats have also been made having an edge in the form of a quarter circle. The circle is tangent to the top surface of the mat on which the chair or other object is placed and is perpendicular to the floor material at its opposite extremity. The bottom surface of such mats are totally flat to the exterior edges of the mat.

In addition to the above-described prior art mats, mats have also been made having a beveled edge with the thin edge or the bevel at the lower surface of the mat. In addition, combinations of the above edges, commonly called "patterned shapes," have been also employed.

All of the mats previously used have tended to slip on carpeting when subjected to a horizontal component of force caused by walking on the mat or by movement of a chair or chair on casters across the top surface of the mat. In addition, when a mat having a flat bottom configuration is used on carpeting, a weight located near the center of the mat such as caused by a chair or other object results in the edge of the mat rising from the carpeting surfaces. The edge can prove hazardous to persons crossing the perimeter of the mat, possibly resulting in a person tripping and injuring himself.

The prior art chair mats have also been vulnerable to breakage of their edges due to the thin configuration of the rounded edge. This chippage or breakage results in an impaired appearance and also tends to gradually erode the mat when it is of pressed board. Further, the chipped edge may also tend to create an uneven surface, resulting in tripping as the surface is crossed. On cast acrylic mats the edge chipping may lead to a concentration of stress from which a crack or split may develop, destroying the useability of such a mat.

SUMMARY

The chair mat of my invention eliminates the disadvantages of the prior art mats and has several additional advantages. A preferred embodiment of my chair mat may be made of plastic, pressed board, or other suitable material having stability and strength when formed into a flat, relatively thin sheet. The material of the mat may have a rough or smooth texture as desired and may be colored to match or contrast with the flooring material that it will be placed upon.

The flat material used in the manufacture of my mat may be cut into any desired configuration. A T shaped configuration has the advantage of providing a large portion of its area behind a desk where the wheels or casters of a chair are located. The leg of the T projects under the desk and protects the flooring material under the desk from wear by the feet of a person sitting in a chair located on the mat. Other shapes may also be employed, such as oval or rectangular. The configuration chosen is dependent on the location where the mat is to be used and may be selected to provide the maximum protection for the area of use.

In the preferred embodiment of my invention the edge of the mat is curved downwardly around the entire periphery of the mat so that a portion of the edge lies below the bottom surface of the mat. The edge may be curved in the molding step of the mat or may be the result of later operations performed on the sheet material. The downwardly projecting edge is smoothly curved to prevent injury to the flooring surface on which the mat is placed. The edge is of sufficent dimensions to provide a strong rigid rib around the lower outer edge of the mat.

The projecting edge of the mat is curved in a manner that will allow it to dig into the carpeting surface, thereby preventing sliding of the mat across the carpet. Further, the mat of my construction reduces tripping at the edge of the mat, since when a load is placed on the center of the mat the downwardly projecting edge rises but does not allow a space to form between the mat edge and the carpeting surface. The gradual curve of the edge also tends to reduce any projections that might otherwise contribute to tripping.

In addition to the above advantages the edge of my mat is stronger and more rigid than the prior art mat. The curved edge, because of its increased rigidity, reduces warpage of the mat.

The curved edge of my mat reduces the tendency of the mat edge to chip when impacted by an object striking it. This improvement is accomplished through the fact that a curved surface is presented to the foot or other striking object rather than a sharp or even sharply curved edge.

Other advantages of my mat include the use of thinner material for the mat because of the increased rigidity caused by the edge of my invention and the fact that the top surface of the mat is closer to the flooring surface due to its thin configuration. The latter improvement further reduces tripping across the edge of the mat and permits easier movement of a chair or other article of furniture on and off the top surface of the mat.

DESCRIPTION OF DRAWINGS

My invention will be explained in greater detail below and in the drawings in which:

FIG. 1 is a plan view of the chair mat of my invention;

FIG. 2 is a cross section along line 2—2 of the mat shown in FIG. 1.

DESCRIPTION OF PREFERRED EMBODIMENT

Referring to FIG. 1, a chair mat 1 of my invention in one preferred form is generally T shaped and is formed of plastic, pressed board material or other suitable material capable of being formed into a relatively flat thin sheet having impact resistance. The sheet material used for the mat may be cut to the required configuration from a larger

section or may be originally formed in a shape approximating the final item. The material of the mat should be of sufficient thickness to withstand impacts of a chair or other item of furniture and the impacts of a person walking on its surface. Further, the material should have sufficient abrasion resistance to withstand scuffing and other wear caused by casters on a chair and by the feet.

The leg 2 of chair mat 1 is designed to be located under a desk, providing protection for the carpet or other flooring surface under the desk. The top bar 3 of the T shaped mat is designed to be parallel to the back of the desk and provide a surface for the casters of the chair.

As shown in FIGURE 2, mat 1 has a peripheral edge 4 which is bent downwardly and grips carpet 5 on which it is placed. The depending lip 4 is so designed as to have at least some portion lower than the bottom surface 6 of the mat. This causes lip 4 to dig into the carpeting surface and provides resistance to movement of the mat when a force parallel to the surface of the mat is applied to it. In addition, the lip 4 strengthens the edge of the mat providing resistance to torsional movement of the mat thereby reducing cracking of the mat and the uneven surface thereby produced.

The lip 4 is provided with a gradually curved outer surface 7 which forms a gentle rise from the carpet surface to the top of the mat. The curved surface will begin below the upper surface of the carpet, since the weight of the mat will press the depending edge of lip 4 into the carpet 5. The smooth incline thus formed will reduce any tendency of the edge to catch a heel or toe of a person crossing the periphery. In addition, the curved surface will facilitate the movement on and off of the mat of an object to be placed on it, such as a chair.

The size of the lip 4 to be provided in my mat is determined by the type of material that the mat will be used on. For instance, if the mat is designed for use on a heavy pile carpeting, then a deep lip should be provided. If, on the other hand, the mat is to be used on tile or low-pile carpeting, a lip of smaller size should be used. The lip 4 of my invention is also provided with a rounded outer edge 8 to reduce marring of floor surface and prevent breakage of the edge.

The lip 4 may be formed by any conventional technique. A flat piece of material forming the mat can be pressed with conventional molding techniques to form an edge. Alternatively, entire mat may, if desired, be molded in a single operation to form both the mat and edge. In addition, it is possible to attach a separate edge to a mat

in such a manner as to join the two pieces into a single unit. The latter method allows a basic mat to be altered for use with various size edges for a variety of surfaces as indicated above.

Although I have illustrated a T shaped mat, it is to be understood that oval, rectangular or free form mats are possible employing my inventive concept. For instance, oval mats may be used under a table or other item which is located near the center of the room.

It is to be understood that the particular configuration of mat shown may be varied to any desired plan configuration, and the embodiment shown is merely by way of illustration.

What is claimed is:

1. A protective floor mat for use upon soft flooring, comprising: a sheet of predetermined flexibility having a substantially planar portion when unstressed with a preselected outline, said planar portion including an upper bearing surface for receiving the weight of an object placed thereupon and a lower surface for engaging underlying portions of the flooring over substantially its entire area when so weighted, thereby distributing said weight over said area; and means for inhibiting movement of the mat with respect to the flooring, comprising an integrally formed downwardly projecting peripheral edge portion extending below said lower surface and forming an extension of said planar portion for frictionally engaging said flooring, outermost portions of said peripheral edge being rounded and extending below the uppermost portions of the soft flooring when in use, said downwardly projecting edge extending curvilinearly from the upper bearing surface of the mat to said outermost portions of said peripheral edge.

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