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CASE ANGLE SHOE

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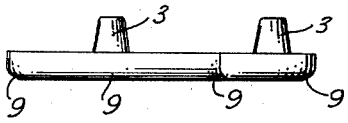

Fig. 1

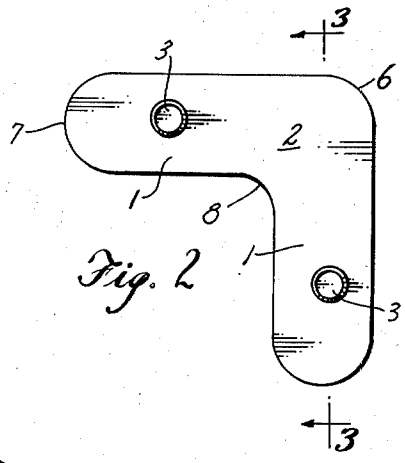

Fig. 2

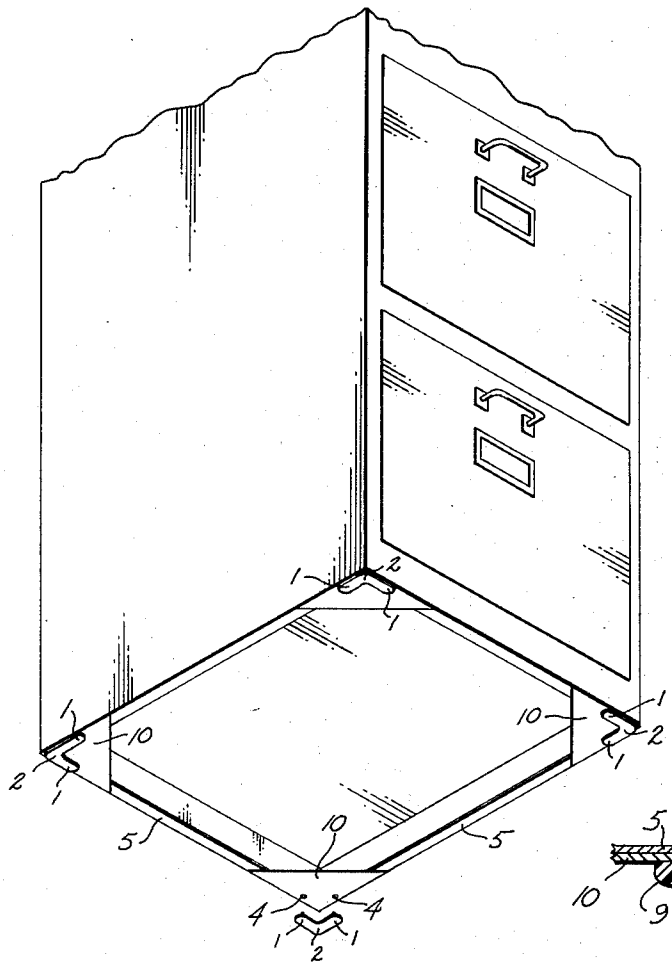

Fig. 4

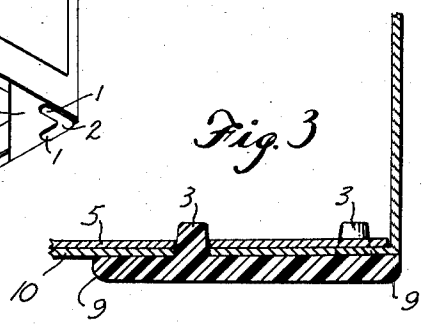

Fig. 3

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CASE ANGLE SHOE

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This invention relates to a supporting shoe of angle shape for use on the bottom of a case, such as a filing cabinet, a mobile kitchen cabinet, or a desk. All of such articles are embraced within the term "case" but the invention may be of greatest utility for filing cabinets.

The principal object of the invention is to provide shoes for case bottoms which will raise such bottoms off the floor slightly to allow ventilation and avoid collection beneath the case bottom of moisture from mopping the floor, or from condensation. Such moisture promotes rusting of metal case bottoms, which produces stains on various types of floor coverings, such as linoleum and asphalt tile, or floors such as concrete and wood. Moisture also induces rotting of the wood case bottoms and wood floors beneath them. Such a shoe is hard and smooth so that the case, even though heavy, can be slid easily over the floor, whether of wood, concrete, linoleum, plastic tile, or even carpeting.

A further object is to provide such a shoe which will be strong, durable, wear-resistant, light, inexpensive, and easy to apply to the bottom of a case so as to provide quickly a substantially permanent installation. In particular, it is an object to provide a convenient way for attaching such shoes securely to the bottom of a case.

Another object is to provide such a case shoe which will support the load of the case weight and its contents effectively by contacting a portion of the case bottom. Specifically, the shoe is designed to engage the corner of a case bottom which is structurally usually the most rugged portion of the bottom. The shoe is fitted to the corner so that no part of it projects appreciably beyond the sides of the case bottom. At the same time, terminal portions of the shoe are rounded to deter catching of the shoe on projections from a floor as the case is slid over it.

An additional object is to make such a shoe of material which is smooth and slippery, preferably being slightly greasy to the touch so as to reduce to a minimum the friction between such a shoe and the floor. Such material, while hard, should be slightly resilient to avoid damage to a floor of any material from scraping, and sliding over the floor is facilitated and the possibility of scraping further reduced by making all the corners of the bottom surface chamfered.

It is a further object to provide such a case shoe which will contact both the case botom and the floor in a stable fashion over an adequate area to provide proper support for the case and which will be of a shape to avoid rocking or tilting of the shoe.

Further, such shoes should be economical to make, light in weight, capable of being nested compactly for shipping, attractive in appearance, and non-corrodible.

The foregoing objects can be realized by providing a shoe in the form of a flat strip of angle shape, having rounded projecting and reentrant corners formed by legs having rounded ends. The corners of the lower surface are chamfered and lugs are provided, one projecting upward from the upper surface of each leg, for connection to the bottom of a case by insertion into sockets in the case bottom. The shoe may be made of hard, slightly resilient, molded plastic material, preferably slightly greasy to the touch, such as nylon.

Figure 1 is an edge view of a preferred form of case angle shoe.

Figure 2 is a plan view of the shoe.

Figure 3 is a vertical sectional view through one leg of the shoe on line 3—3 of Figure 2 shown attached to a metal filing cabinet bottom.

Figure 4 is a bottom perspective view of a filing cabinet showing shoes on three corners and a shoe in position to be placed on the fourth corner.

It is undesirable for large, flat bases of office cabinets, such as filing cabinets, map or drawing cabinets and stationary cabinets, to rest directly on the floor because, if the floor is mopped, such as a linoleum floor, moisture seeps beneath such a cabinet bottom. If the bottom is of steel, it is rusted. If the cabinet bottom is of wood, it tends to rot because of lack of ventilation. To move such cabinets, particularly if they are filled, is very difficult and sharp edges, frequently found on such cabinets, gouge or scrape the linoleum floor thus causing damage and increasing the effort required to move such cabinets. Heavy desks, also, are difficult to slide across a floor of linoleum or concrete. It is therefore desirable to elevate the bottoms of such cabinets and desks somewhat above the floor. All such articles may be termed generally as "cases."

The problem of providing shoes for cases which would raise their bottoms slightly above the floor and enable them to be moved easily is complicated by the fact that cases frequently are arranged side by side in a room. Filing cabinets, for example, may be placed in a row. A desk may be placed close to a filing cabinet or to a drawing cabinet. A stationary cabinet may be included in a row of filing cabinets. In such instances, it is usually desirable for the cases to abut, so that such shoes as may be attached to the bottoms of the cases should not project beyond the sides of the cases. Frequently, however, such cases are supported by their edges. Thus, in a filing cabinet, a flange may be provided around the edge of the bottom and the central portion of the bottom covered only by a piece of light sheet metal not backed by supporting structure. Drawing cabinets and stationery cabinets frequently have a generally similar type of construction. Desks may be supported by legs provided only at its corners. In applying shoes to a case, therefore, the shoes should not project beyond the sides of the case but support the edges and, more particularly, the corners of the case.

Cases in general are heavy, particularly when filled, and any shoe provided for such a case must therefore have a firm bearing of considerable area both on structural portions of the case bottom and on the floor. Such shoes should be of a shape and applied to the case bottom in a manner so that the case cannot rock easily on the shoes. Provision must be made for securing the shoes adequately and firmly to the case bottom, yet

it is very desirable that the application of the shoe to the case bottom be accomplished with minimum time and effort expended. The shoes of the present invention can be attached to the bottom of a case simply by drilling a couple of holes of the right size and location in the case bottom. No holes are required in the shoe and no metal parts are used.

It has been found that a shoe formed of a strip of angle shape to fit a corner of a case bottom has provided a very satisfactory solution to this troublesome problem. The strip includes two legs 1 integral with and projecting from a corner portion 2, preferably at right angles. Each strip leg is of a width several times its thickness, the width being approximately three times the thickness or slightly more. Conveniently, the strip can be three-sixteenths of an inch thick or slightly greater, and the width of each leg can be five-eighths of an inch to three-quarters of an inch or so, for example. Also, it is preferred that the length of each leg be several times the width of a leg, such as the leg being approximately three times as long as its width, for example two inches to two and one-half inches in length. It will be understood, however that such dimensions are merely examples of practical sizes for these components of the shoe.

If the shoe is to be attached to the bottom of a case by providing socket holes in the case bottom, a very quick and effective way of securing the shoes in place is by providing lugs 3 projecting upward from the upper surface of the shoe as shown in Figure 1. These lugs preferably are of circular cross section and are somewhat tapered. One of these lugs should be located on each leg so that each leg will be secured to the base bottom. If holes or sockets of the proper size and location are provided in the case bottom, the lugs may be inserted in them with a snug fit and preferably a press or light drive fit. These socket holes, such as the holes 4 shown in Figure 4, should be located one at each side of a corner of the case and sufficiently far in from the case wall so that the outer edges of the shoe will not project beyond the case wall. Because the structure of a filing cabinet, for example, capable of supporting its weight, such as the flanges 5, is quite narrow, it may be desirable for the lugs 3 to be placed somewhat nearer the outer edges of the shoe than its inner edges. Ideally, the holes 4 and lugs 3 will be located so that the outer edges of the shoe will be flush with adjacent side walls of the case.

The lugs 3 should be located sufficiently far from the corner portion 2 of the shoe so as to provide stability of attachment. On the other hand, such lugs should be sufficiently close to the corner portion 2 so that it will not tend to fall away from the bottom of the case if one corner should be raised. Desirably, therefore, the lugs 3 will be located generally centrally of their respective shoe legs. The holes 4 can then be drilled in corresponding locations in the bottom of the case by use of a template having in it apertures located in positions corresponding to the positions of the lugs 3 on the shoe.

When the case is supported on a floor by such shoes secured to its corners, as shown in Figure 3, the bottom of the case will be raised above the floor by an amount equal to the thickness of the shoe strips which will afford adequate ventilation space. To facilitate sliding of the case over the floor on the shoes in case any obstruction should be encountered, the projecting corner 6 is curved convexly. Similarly, the extremities 7 of the legs are curved convexly. If either of these parts should engage a floor obstruction, therefore, the shoe would tend to slide sidewise in one direction or the other to move around the obstruction. It is also preferred that the reentrant corner 8 be rounded, as shown in Figure 2, and its radius of curvature may be equal to the radius of curvature of the projecting corner 6 so

that the projecting corner of one shoe can be placed in the reentrant corner of another shoe. In this manner, any desired number of shoes can be nested in chevron or herringbone fashion for shipping purposes.

Some obstructions on a floor are not sufficiently high to warrant lateral shifting of a case to avoid the obstruction. Such obstructions, for example, may be roughness on a concrete floor. To facilitate sliding of a case over such a rough surface and further to avoid any possibility of a corner of a shoe gouging or scraping a floor covering of linoleum, of asphalt tile or of rubber tile for example, all the corners 9 on the lower surface of the shoe are chamfered and preferably such chamfers are rounded as shown in Figures 1 and 3.

Sliding of the shoes is implemented and any tendency of the shoes to injure the floor or floor finish is further reduced by the material of which the shoes are made. While various types of hard plastic material would be reasonably suitable, the preferred material is nylon. Nylon, or such other plastic as might be used, is hard, smooth, strong, tough and wear-resistant, in which respects it is similar to metal. Such nylon or equivalent plastic material has the further desirable attributes, however, of being noncorrodible, slightly resilient, usually more resilient than metal, and being somewhat greasy to the touch; that is, it is slippery so that it will slide well. In addition, such plastic material is light and can be molded readily so that the entire article including the lugs 3 can be of unitary construction. While such plastic material is hard, it can be cut more easily than most metals. When the lugs 3 are driven lightly into the holes 4, the root rotions of the lugs may be shaved slightly by the peripheries of the holes so as to provide a very tight and accurate fit. Even if the holes 4 should not be located exactly in the right places, therefore, the sides of the tapered lugs would be shaved sufficiently to provide the desired fit without producing excessive shearing force on the lugs. Moreover, such plastic material is not brittle and is sufficiently resilient so that the corner of the socket aperture tends to bite into the root portion of the lug somewhat to increase the holding action.

The structures of cases differ considerably. In the illustrative example shown in Figure 4, the marginal flanges 5 are reinforced at the corners by gussets 10. Sometimes a continuous sheet covers the entire bottom of a cabinet instead of only the corners. In either case, the corner portions of the case bottom would be strongest so as to support most effectively the weight of the case. Also, location of the shoes at the corners distributes the load of the entire case to the shoes effectively. The angle shape of the shoes tends to deter rocking or tilting of such shoes relative to the case bottom. Even though the gussets 10 were not provided, the shoes would not tend to rock and bend a flange 5 engaged by one leg 1 of a shoe because the other leg of the shoe extends along and is braced by the flange 5 on the adjacent wall of the case. The possibility of a shoe rocking is further reduced by providing generally three-point contact with the case bottom and the floor by the two legs 1 and the corner portion 2 of the shoe. The angle shape of the shoe also provides the greatest load-carrying ability and stability for most case structures for the amount of material required to make the shoe.

We claim as our invention:

1. A case angle shoe comprising a strip of hard, slightly resilient plastic material of right angle shape including a corner portion and mutually perpendicular legs projecting from said corner portion, said corner portion and legs having broad, substantially flat, coplanar bottom bearing faces, and an attaching lug integral with each of said legs and projecting from its side opposite said coplanar bottom bearing faces for

engagement in sockets in the bottom of a case with said coplanar bottom bearing faces facing downward.

2. A case angle shoe comprising a strip of hard, slightly resilient plastic material of right angle shape including a corner portion and mutually perpendicular legs projecting from said corner portion, said corner portion and legs having broad, substantially flat, coplanar bottom bearing faces, and a tapered attaching lug of circular cross section integral with each of said legs and projecting from its side opposite said coplanar bottom bearing faces for engagement in sockets in the bottom of a case with said coplanar bottom bearing faces facing downward, the corners of said legs adjacent to said coplanar bottom bearing faces being chamfered along the lengths of said legs.

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