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W. H. BLACK

3,248,750

FURNITURE HARDWARE

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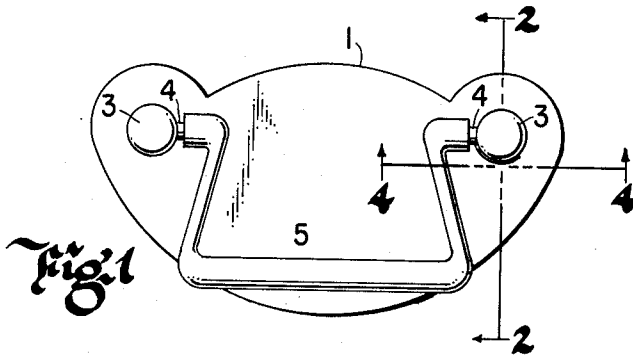


Fig. 1

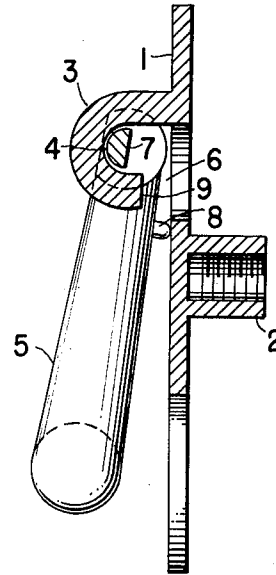


Fig. 2

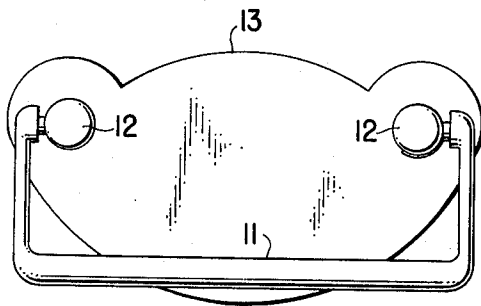


Fig. 5

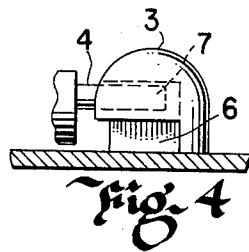


Fig. 4

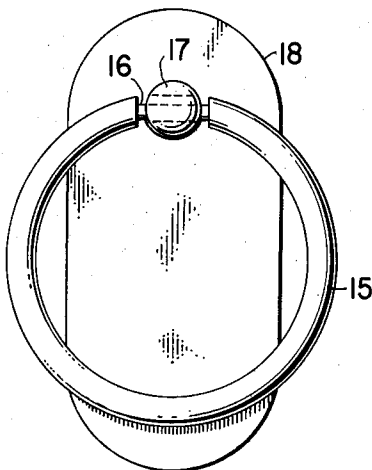


Fig. 6

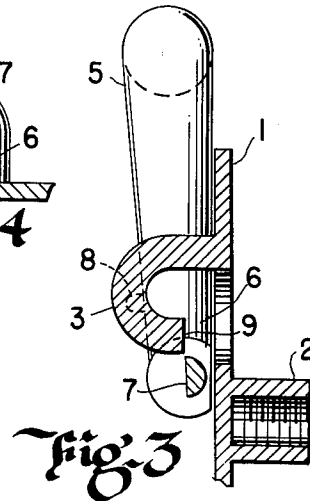


Fig. 3

INVENTOR.
WM HORACE BLACK

BY
Marshall, Wilson & Yeasting
- attorneys -

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FURNITURE HARDWARE

William Horace Black, Atlanta, Ga., assignor to Winzeler South, Inc., High Point, N.C., a corporation of North Carolina

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This invention relates to a hinge construction having particular value in the construction of drawer pulls and similar loosely pivoted members.

Furniture drawers, as an example, are provided with handles which may be either fixed or movable. This invention may be embodied in a hinge connection between a movable type of handle and a back plate which in turn is attached to the front of a drawer of a cabinet.

The principal object of this invention is to provide an improved hinging arrangement of a first member with respect to a second member so that these members may be readily assembled without the use of tools.

Another object of the invention is to provide an assembly such as a handle and back plate assembly for a furniture drawer which may be readily manufactured as a stamping, molding or casting made of plastic or metal that may be readily finished as two separate pieces and then assembled by a simple hand operation.

More specific objects and advantages are apparent from the following description of a preferred form of the invention.

According to the invention a first member of the assembly is provided with one or more projections at least one of which is hook shaped and a second member of the assembly is provided with a reduced portion of generally semi-cylindrical cross section adapted, when the second member is at one extreme of its range of movement relative to the first member, to pass through the opening of the hook shaped portion and enter the hollow portion of the hook-shaped projection. Rotation of the second member from its extreme position prevents escape of the reduced tip portion from engagement with a hook-shaped projection. The parts are preferably made with a slight interference fit so that moderate pressure is required to force the semi-cylindrical cross section tip portion through the gap into the hooked shaped cross section of the first member. When the second member is rotated from its extreme position the parts are interlocked so that the second member cannot escape from the first member.

A preferred form of the invention, as applied to a furniture drawer pull, is illustrated in the accompanying drawings.

In the drawings:

FIGURE 1 is a front elevation of the improved drawer handle and back plate assembly.

FIGURE 2 is a vertical section of the improved assembly taken substantially along the line 2-2 of FIGURE 1.

FIGURE 3 is similar to FIGURE 2 except that the handle is shown in position to be assembled into the back plate.

FIGURE 4 is a view, partly in section, of one of the projections of the back plate showing the tip portion of the handle in position therein.

FIGURE 5 is a front elevation of another form of drawer handle incorporating the invention.

FIGURE 6 is a front elevation of still another form of drawer handle embodying the invention.

These specific figures and the accompanying description are intended merely to illustrate the invention and not to impose limitations on the claims.

The invention may be applied to various hinged arrangements where one member is pivotally attached to another. A particular example is a drawer pull, in which

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the handle or bail is pivotally attached to a back plate. Such an improved furniture drawer pull or drawer handle comprises a back plate 1 preferably provided with one or more rearwardly directed threaded bosses 2 (FIGURE 2) adapted to enter holes drilled in the front of a drawer and to receive screws threaded through the holes and into the bosses 2 to retain the back plate 1 against the front surface of the drawer.

The back plate 1 also has one or more projections in the form of forwardly directed dome shaped bosses 3 that are hollow and open on at least one side to form a socket to receive the tip portions or pins 4 formed on the handle 5.

In the arrangement shown in FIGURE 1 the left boss or projection 3 forms a socket opening to the right to receive a handle pin 4. Likewise the projection 3 at the right side, in addition to the opening directed toward the left toward the other projection, has its lower wall omitted to form a gap 6 (FIGURE 2) that is just slightly less than the minimum thickness of generally semi-cylindrical portion 7 of the pin 4.

FIGURE 2 shows the handle 5 in its normal position in which the pins 4 are forced forwardly in the sockets formed in the projections 3 as small nibs 8, one adjacent each of the pins but offset therefrom, engage the surface of the back plate to prevent the handle 5 from falling down against the back plate. This holds the handle 5 out from the back plate far enough that a person may readily grasp the handle without interference from the back plate.

FIGURE 3 shows the handle 5 at the limit of its motion relative to the back plate 1 in position to be assembled with the back plate. In this position the pin 4 at the left end of the handle 5 has been inserted into its socket in the projection 3 while the generally semi-cylindrical cross section portion 7 of the right hand tip 4 is in position to enter the gap 6 formed in the projection 3 adjacent the back plate. As shown, when the handle 5 is pressed against the back plate the upper corner of the tip portion 7 of the pin may be started past the edge 9 of the gap 6 in the socket. These surfaces are tapered or slanted relative to the back plate so that further movement of the pin portion 7 into the socket results in a slight interference so that an appreciable force is required to push the handle into position. This close fit is essential so that, in normal operation when the back plate has been attached to the drawer, the handle may be flipped upwardly in use without the pin portion 7 entering the gap 6 and falling out. Rather it requires a definite intentional application of force with the parts in exact alignment to force the pin section 7 through the gap in either direction.

FIGURE 4 shows the gap 6 leading into the socket in the projection 3 in greater detail and also shows the relative location of the pin 4 and its end 7 in the socket when the handle is in its normal position as shown in FIGURES 1 and 2.

FIGURE 5 shows an arrangement of a handle, similar to that shown in FIGURE 1 except that the pins of a handle 11 are directed toward each other and the receiving sockets are formed in the outer portions of bosses 12 of a back plate 13. In this structure one of the bosses 12, corresponding to the projections 3, is formed with a notch or gap in its lower surface adjacent the surface of the back plate 13 to receive the semi-cylindrical section of the tip or pin of the handle 11.

Some furniture designs call for handles in the form of rings rather than the bail type handles shown in FIGURES 1 and 5. FIGURE 6 shows such an arrangement where the handle is in the form of a ring 15 having a reduced section 16 that is semi-cylindrical in cross section corresponding to the ends 7 of the pins 4 of the

handles 5 or 11. A projection 17 formed integrally with a back plate 18 is generally circular as seen from the front in FIGURE 6 but has a vertical cross section that is similar in form to that shown in FIGURES 2 or 3 so that when the handle 15 is raised to its upper extreme of travel relative to the back plate 18 its semi-cylindrical portion 16 can be forced from the socket 17. As in the previously described constructions the depth of the gap 6 in the projection 17 leading into the socket portion is designed to be a slight interference fit with the semi-cylindrical cross section portion 16 so that an intentionally applied force is required to disassemble or assemble the parts.

While the pins 4 near the ends are shown as being of semi-cylindrical cross section that feature is not essential but is merely the preferred form. All that is required is that the pin 4 shall be offset laterally relative to the handle 5, and in particular the portion of the handle 5 adjacent the pin, so that when the handle is in one extreme position the pin may be moved through the gap 6 into the socket and that when the handle is moved from such extreme position other portions of the handle engage the adjacent surfaces of the back plate 1 to force the pin forwardly into the deeper section of the socket and away from the gap. Thus the parts may be assembled or disassembled only when they are in a certain relative position and an intentional force is applied.

While the back plate and handle as illustrated in the figures are designed for manufacture by a die casting operation they may also be manufactured of plastic by molding operations, from metal by ordinary casting procedures or from sheet metal by a stamping operation. The projections 3 forming the sockets to receive the handle are formed integrally with the back plate by die or mold portions extending through the back plate. These members may be shaped to form the notch or gap 6 as well as the hollow interior of the projections 3.

This particular construction makes it possible to produce the various hinged pieces such as furniture drawer handles as simple members that may be readily finished by ordinary tumbling operations and which when assembled, are not subject to accidental disassembly.

Various modifications of the specific structure may be made without departing from the scope of the invention.

Having described the invention, I claim:

1. In a drawer pull having a back plate adapted to be attached to the front of a drawer, a handle having aligned pins, at least one pin receiver integral with the back plate to receive one of said pins, said receiver hav-

ing a notch adjacent the surface of said back plate adapted to admit the cooperating pin into the receiver when the handle is in one extreme of its range of movement, and means on the handle cooperating with the back plate to prevent escape of the pin through the notch in normal positions of the handle.

2. A handle assembly comprising a back plate adapted to be attached to a member to be moved, a handle having aligned pins, at least one pin receiver formed integrally with said back plate and having a socket to receive a pin, said receiver having a notch in a side wall of said socket adjacent the surface of said back plate, said pin being adapted to enter the socket through said notch, said handle having a portion adjacent said pin that cooperates with the surface of said back plate in operative positions of the handle to prevent escape of the pin through said notch.

3. A drawer pull comprising a first part adapted to be rigidly attached to a drawer, said first part having a pair of hollow projections each of which has an opening on a line extending through both projections to form a pair of sockets, a handle having aligned pins engageable in said sockets, one of said projections having a notch adjacent the opening and the surface of said first part adapted to admit one of said pins into the socket, said handle having portions engaging the surface of the first part for preventing escape of the pin through the notch in normal positions of the handle.

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JOSEPH D. STEERS, *Primary Examiner*.

DONLEY J. STOCKING, *Examiner*.

D. L. TROUTMAN, *Assistant Examiner*.