

Extension Bulletin E-816

WALL REPAIR AND FASTENERS

Plaster or dry wall is commonly used for walls. Other decorative materials such as plywood paneling, paper, or just paint are used to help the appearance of the wall. Unfortunately, common fasteners do not perform too well when used on plaster and result in holes or cracks which are unattractive. Settling or shrinking of walls also cause cracks.

Patching A Wall

Popping Nails - The heads of nails used to fasten plasterboard to studs often pop out. This is caused by moisture changes in the studs which squeeze the nail out.

To remedy popped nail heads, first drive additional nails about 2" above and below the popped nail head. Drive the nails, including the popped nail, until a dimple shows around the head. Be sure you hold the plasterboard tight to the stud. (Fig. 1)

Dust off all loose paint and plaster and fill the dimple with patching plaster using a wide putty knife. Let dry and if patch shrinks re-apply patching plaster.

When patch is completely dry, sand with fine sandpaper and paint.

Small Cracks - Small, narrow cracks can be filled with patching plaster.

First remove loose plaster and with an icepick or knife, clean the crack so it is wider at the bottom than on the surface. This allows the new plaster to stick better. With a brush or damp cloth remove loose plaster dust. If water mixed plaster is used dampen the crack.

Fill the crack with patching plaster using a criss-cross motion to work it in. With the wide putty knife feather the edges of the patch, about 2" on each side of the crack, so it will be less visible. When dry sand lightly and paint. (Fig. 2)

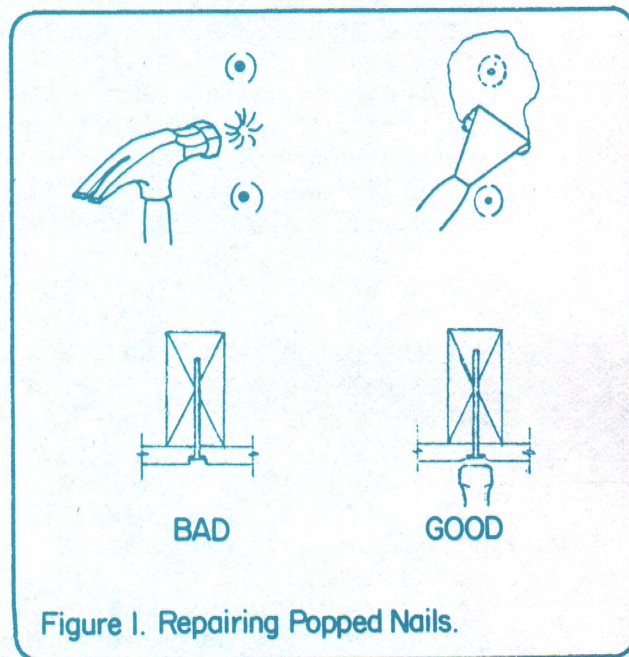


Figure 1. Repairing Popped Nails.

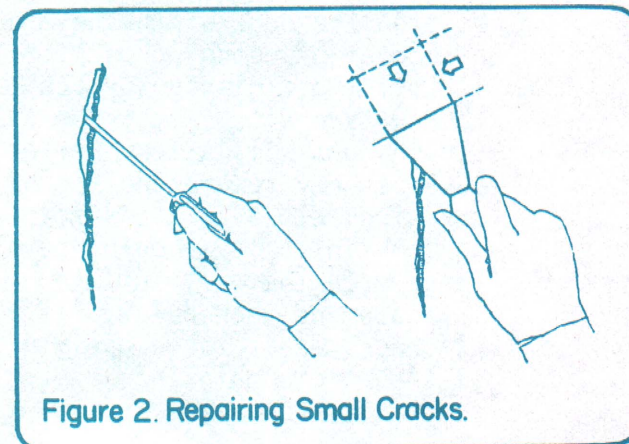


Figure 2. Repairing Small Cracks.

Large Cracks - When the crack is large the wet plaster will not stick. If this is the situation buy a roll of patching tape at a paint store.

Clean off all loose plaster. (Fig. 3). Fill the crack with plaster and press the perforated tape into the wet plaster with a wide putty knife. Squeeze out any excess plaster so there will not be a lump in the wall. Let it dry, sand lightly and paint. A coat of sizing will make the paint stick better and look better.

Holes Through Wall - If there is a large hole through the wall, patching plaster will not stick. Two methods can be used:

(1) The first method, Figure 4.

Mark a rectangle on the wall which includes the hole. With a knife or key hole saw cut out the rectangle being careful not to break it(a). On a scrape piece of plaster-board copy the section of wall(b). Then mark a frame about 2" wide around the section of wall. This is the size of patch to cut. After cutting remove the paper on one side and the plaster from the frame around the patch. The 2" frame of paper will stick out like an ear all around which will hold the patch in place (c).

Spread patching plaster around the edge of the hole and around the edge of the patch. Put the patch in the hole and press the paper ears into the plaster and hold it while it sets (d). Sand lightly and paint.

(2) The second method, Figure 5.

Cut a piece of metal plaster lath or heavy screen larger than the hole. Fasten one or two wire ties to the lath and insert through the hole (a). Pull the lath up behind the hole and wire to a stick of wood placed across the hole on the front side of the wall (b).

Moisten the edge of the hole and spread a base coat of patching plaster to within 1/8" of the finished surface (c). Roughen the surface with a stick or nail so the finish coat will stick. After the base layer is dry remove the stick and clip the wires close to the surface. Trowel on the finish layer being sure it is flush with the wall surface (d). Let it dry good and then paint. If the patched area is large apply a coat of sizing before painting.

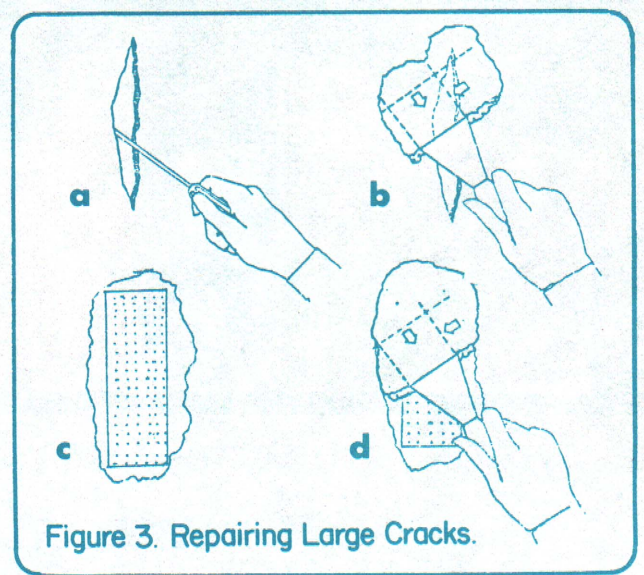


Figure 3. Repairing Large Cracks.

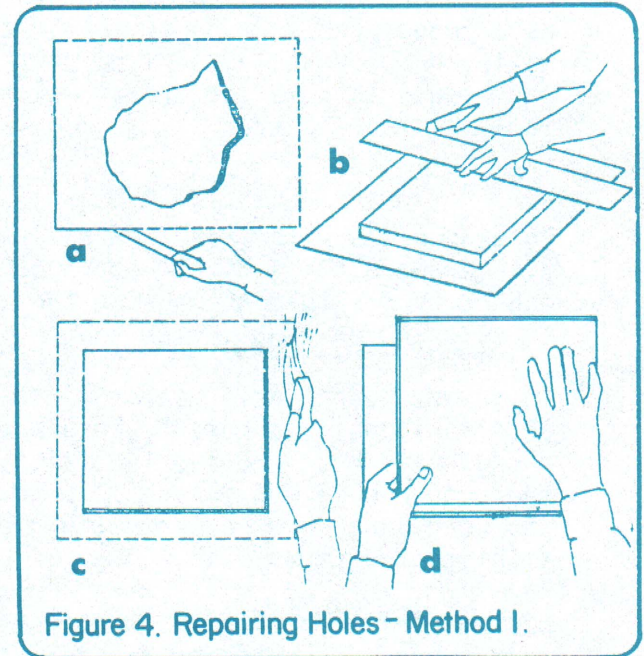


Figure 4. Repairing Holes - Method I.

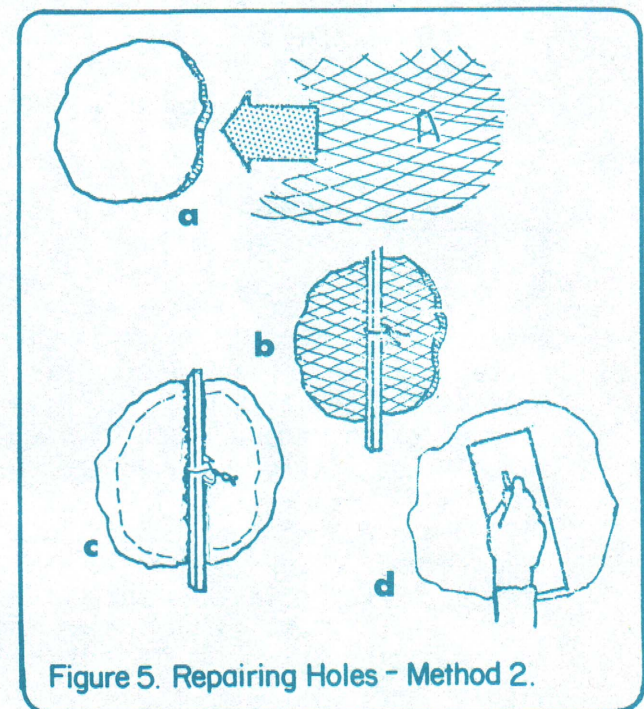


Figure 5. Repairing Holes - Method 2.

Fastening to Plaster Walls

Lightweight Objects or Pictures - Very lightweight objects can be supported with a piece of tape (Figure 6a). The wall must be smooth, clean and dry. The glue is affected by humidity and may let loose so do not hang anything that will break with this kind of fastener.

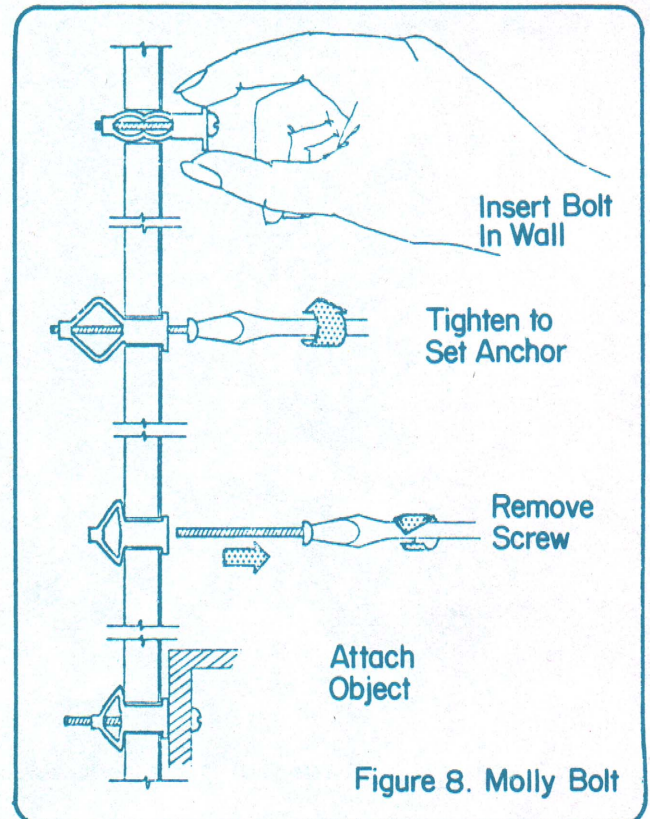
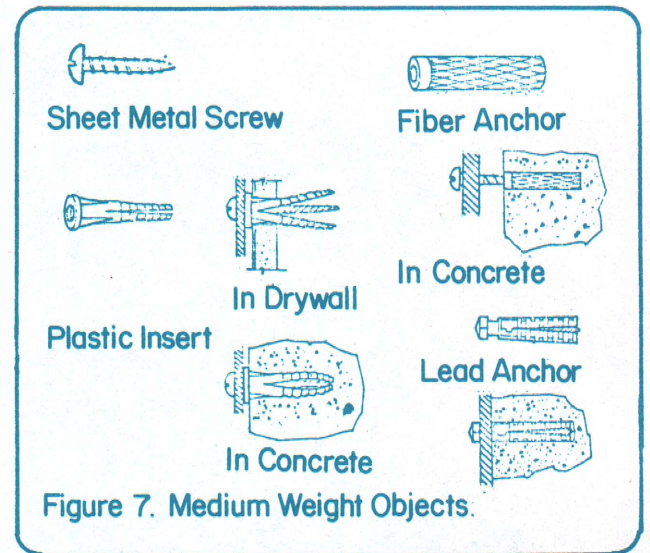
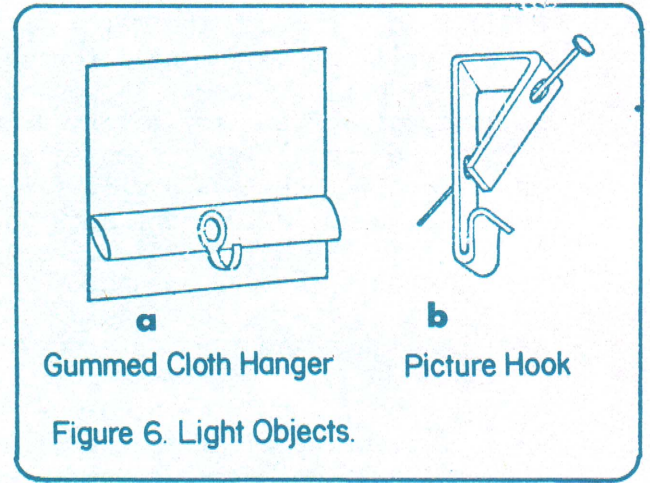
Objects with a wide variety of weight can be supported by a metal hook on a long tapered nail driven at an angle into the plaster (6b). These come in packages of three or four and in different sizes depending on the weight to be supported.

Medium Weight Objects - Some kind of insert, plastic, fiber, wood, or lead can be used with a sheet metal screw (Fig. 7). Drill a hole just large enough to be able to tap the insert into the hole. Tap the insert into the hole until it is flush with the surface. Turn a sheet metal or wood screw into the insert. Usually these inserts come packaged with the right size screw for the particular insert. It will also tell you what size hole to drill.

Heavy Objects - Heavier objects can be supported with a molly bolt or toggle bolt.

Drill a hole through the wall to fit the size of molly bolt (Fig. 8) -- be sure not to get the hole too big or you may have difficulty turning the bolt without having the connector turn. If the only drill is too small, use a small screwdriver, knife, or other object to ream out the hole until the fastener will slide in snugly. Push it in and turn the bolt clockwise until it feels tight. Now the fastener has expanded and should stay tight. Remove the bolt and attach the object screwing the bolt in tight. Do not over tighten or you may pull the fastener loose. Remember plaster is soft.

A toggle bolt can be used similar to a molly bolt but with less care taken when installing. Select a bolt long enough to include the object plus the wall plus the length of the toggle when folded up (Fig. 9).



Drill a hole through the wall. If you do not have a drill: Drive a nail through the wall. Wiggle it until it comes loose and you can pull it out. Put a small screwdriver, knife, or piece of metal into the hole and carefully enlarge until the toggle will slide through. Assemble the object on the bolt and push the toggle into the hole until you can feel it spring open. (Now you cannot remove the bolt without losing the toggle in the wall). Tighten by turning clockwise.

A toggle bolt should be used where the object will be drawn up tight to the wall because the hole must be large enough to receive the toggle. The object should be large enough to cover the large hole that is necessary.

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