mortar droppings (see below) will accumulate through which water may be transmitted in the direction of the thick broken arrow to cause dampness and possibly dry-rot.

The position of the damp proof course is as for solid walls, *i.e.*, at least 6-in. above the ground level. This *must not* extend across the cavity for the reason stated below, and each leaf must therefore be provided with a separate damp proof course.

For cavity wall construction to be effective, it is essential that the inner wall shall be entirely disconnected (except for the cavity ties) from the outer leaf. Where this is not possible, as at door and window openings, special precautions have to be taken, as stated below. If the cavity is bridged by a porous material, water may penetrate and cause dampness on the inner face of the wall. Hence it is important that during construction mortar shall not be allowed to drop and lodge upon the ties (see E, Fig. 14). In order to maintain a clean cavity, a wood batten should be employed of a thickness slightly less than the width of the cavity and with a piece of cord attached to each end. This is supported upon the ties, raised as the work proceeds, and any intercepted mortar and brick chippings removed. Temporary openings should be left at the bottom of the cavity to afford access for the removal of droppings on completion of the wall. Similar gaps should be left at intervals up quoins and jambs through which a lath may be passed to dislodge any deposit on the ties. Another effective method is to flush the whole cavity with water, a hose pipe being used from the top of the wall for the purpose of dislodging any mortar and washing it to the base, from which it is removed through the temporary gaps. *Neglect of this precaution is a frequent cause of dampness in cavity walls.*

The reason why the cavity should extend below the damp proof course, and for the latter to be in separate widths, will now be appreciated. If the bottom of the cavity is level with the damp proof course, or if the latter is the full width of the wall, water may be conducted to the inner leaf through accumulated mortar droppings, and produce damp and unhealthy conditions.

Alternative details at the eaves are shown at A, B and P. That at A is sound, as the solid portion of wall at the top distributes the weight of the roof over both leaves and the overhanging eaves prevents the transmission of moisture through this solid wall. This is a better detail than that at P, which shows the roof supported chiefly by the inner leaf. Detail B shows sound construction. Special precautions should be taken to prevent dampness at parapet walls. Defective construction is shown at A, Fig. 14, where water may be transmitted through the 9-in. solid parapet wall in the direction of the thick broken arrow to cause dampness and possible defect of the roof timbers. The cavity should be extended to the coping. An example of defective construction associated with a flat roof is shown at D, Fig. 14. The cavity should have been continued to the coping, or, alternatively, either a lead or asphalt felt damp proof course should have been inserted above the cavity where indicated. It is always advisable to continue the asphalt roof covering (or lead flashing) for the full thickness of the wall to prevent the penetration of water through defective coping joints or porous stone or brickwork.

In the absence of adequate precautions dampness will readily occur round door and window openings. An example of unsound construction, commonly adopted, is shown at K, Fig. 13, where water may penetrate in the direction of the thick broken arrow through the solid jamb. A damp-resisting material should be provided as shown at M and O. The former detail shows a double layer of slates, bedded in cement, the outer layer projecting in a groove in the frame; this groove should be filled with oil mastic as the work proceeds. Effective construction is also shown at O, where lead, asphalt felt or a double layer of slates is applied at the slightly recessed jamb. A small reverse recessed jamb is shown at N, and the bevelled bricks forming the inner reveal only come into contact with the frame, which should be bedded in mastic; this detail is not recommended for adoption in exposed positions, although it is an improvement upon K. Detail L shows the cavity extending to the opening, and being closed by a double layer of slates in cement. This is quite satisfactory, although not so effective in withstanding heavy loads transmitted from lintels. An alternative method for preventing dampness at jambs consists of placing as the work proceeds a vertical layer of asphalt felt or lead as shown at D, Fig. 32, and A, Fig. 33, Vol. III; this layer should be 9 in. wide, extending to the groove of the window frame at one edge and into the cavity at the other.

Dampness is very liable to be caused at the heads of openings if proper protection is not afforded. Thus, water passing through defective joints, etc., in the outer leaf will travel down its inner face until it comes into contact with a lintel, when it will spread along the top to the inside face of the inner leaf; the water will also drip at the soffit. The protection should take the form of a lead, copper or asphalt felt covering, stepped down from the inner leaf, as shown at C, Fig. 13, and continued over the tile course or window (or door) frame, as indicated at A and C, and by broken lines at D (see also D and O, Fig. 28, Vol. III.). This covering should extend for some 3 to 6-in. beyond each side of an opening or end of a lintel in order that the water may drip clear into the cavity. In addition, a few open vertical joints may be left in the brick head to allow any water to escape. The alternative lead trough, shown at D, is *not* recommended, as this does not prevent water from gaining access through defective joints in the head (or porous bricks) and causing dampness. Nor is it sufficient to use a narrow covering with the lower edge bedded in the joint level with the top or above a concrete lintel; contact between the lintel and the head or arch must be broken by the lead, which is continued as shown by broken lines at B, Fig. 14.

Dampness may also be caused at window sills, especially if these are of porous stone and are in direct contact with the brick backing (see C, Fig. 14). An effective preventive is to break contact by means of a lead or asphalt felt covering as shown by broken lines, or by continuing the cavity (even if reduced in width) to the wood sill or window board. The ends of stone or terra-cotta sills should be notched with the back flush with the inner face of the outer leaf