

Design & Manufacture

Homework 27

Mechanical Fixings for Wood

Nails, pins and screws, used without glue, provide a semi-permanent method of jointing.

Nails and Pins

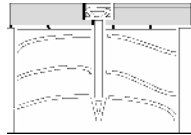
Panel Pin

A pin is a small nail, made from rigid mild steel wire. Pins are normally used with adhesive, to hold the joint together while the adhesive is setting.



Pin Punch

A pin punch is used with a hammer to drive the head of the pin below the wood surface. The hole above the pin head can then be filled with a wood filler so that the pin cannot be seen.



Round Wire Nail

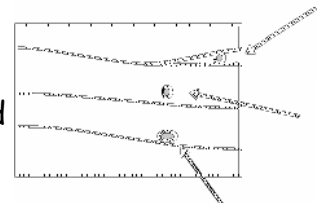
Made from galvanised mild steel the wire nail is used for exterior heavy construction. The nail head cannot be hidden. Nails are normally used without any adhesive and rely upon friction between the nail shaft and the surrounding wood to hold them in.



Oval Brad

The shaft is oval in shape so that when correctly used it is less likely to split the wood. The oval brad can be hidden by using the same method as hiding a pin.

Split caused by placing the nail too close to the end of the wood.



Nail placed at least nine times its diameter from the end of the wood to avoid splitting.

Oval Brad placed with the grain of the wood to avoid



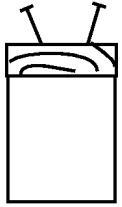
Claw Hammer
For general work
and removing
headed nails

Cross Beak Hammer
For small nails and pins.



oval length in line with the splitting.

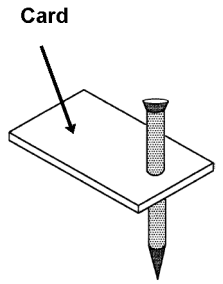
Dovetail Pinning



Pins and nails driven in at an angle are less likely to pull out in use. This is known as Dovetail pinning.

Safety hint

Small pins are difficult to hold without the danger of hitting your fingers with the hammer. Push the pin through a piece of card and hold the card well away from the pin. Once the pin is held in the wood the card can be torn away.



Questions

1. What holds a pin or nail in place?

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2. What is a nail made from?

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3. Describe how the heads of pins can be 'hidden'.

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4. How can you prevent nailed wood from splitting?

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5. Show how you can hammer in small pins safely?

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