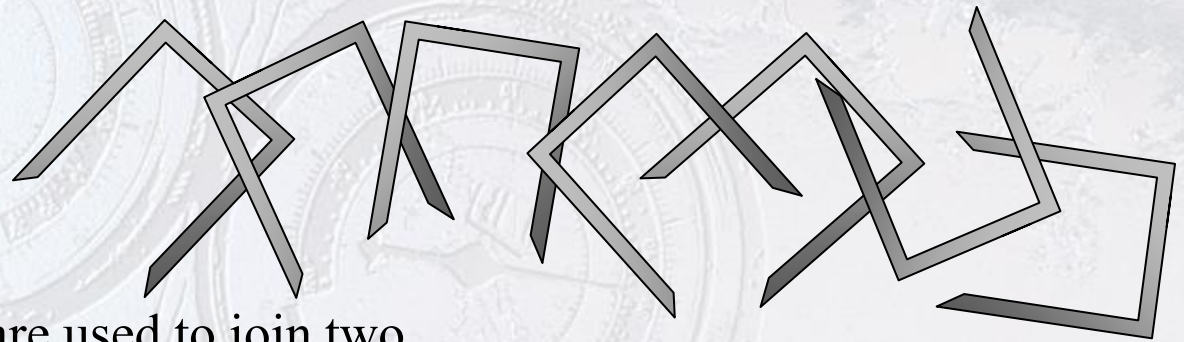


NAILS

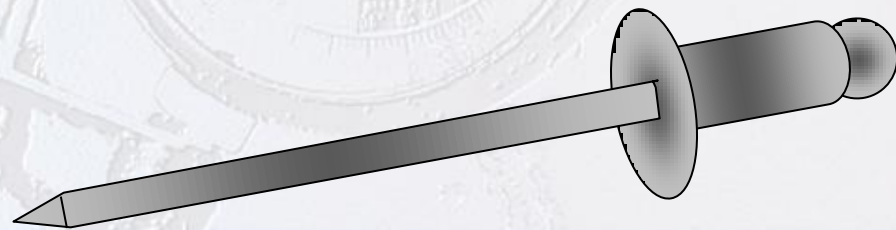
- The most popular fastener for securing wood
- Different styles and types for different uses
 - Common nails
 - Masonry nails
 - Finishing nails
 - Roofing nails
- Nails are sized by the term “penny”

STAPLES AND RIVETS

- Staples are available in a number of sizes for different applications, such as fastening wire in place



- Rivets (pin or blind) are used to join two pieces of sheet metal.



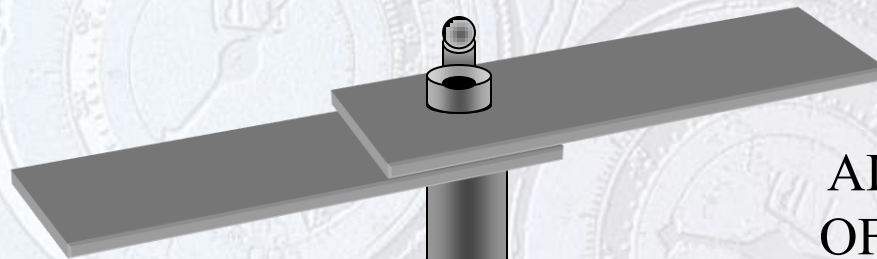
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SIXTH EDITION

USING THE BLIND OR PIN RIVET TO JOIN SHEET METAL

INSERT THE RIVET
THROUGH THE HOLE

THEN... SECURE THE RIVET WITH A
RIVET GUN...



ALIGN THE TWO PIECES
OF METAL TO BE JOINED

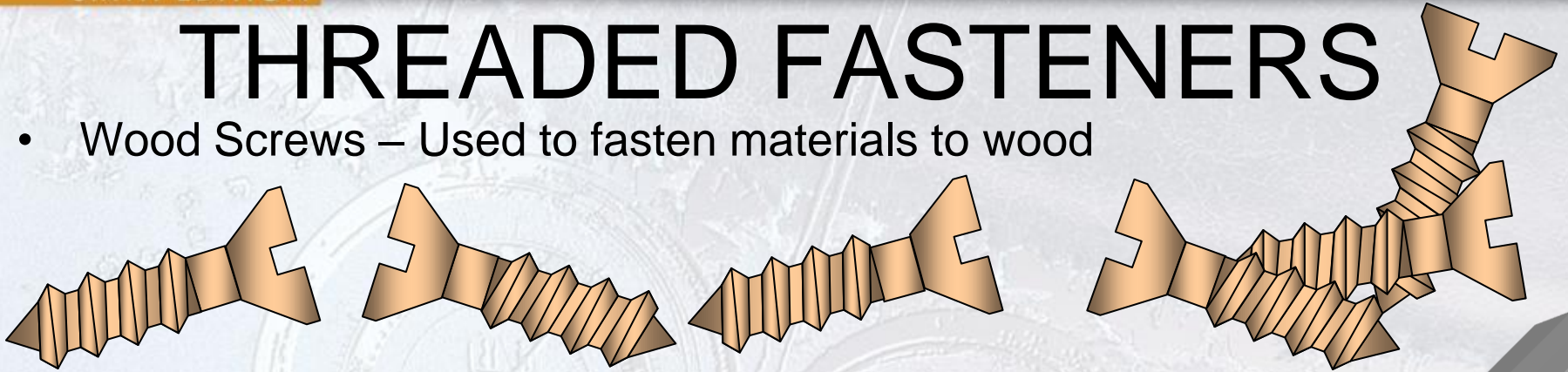
THEN DRILL A HOLE
THROUGH BOTH PIECES
OF METAL



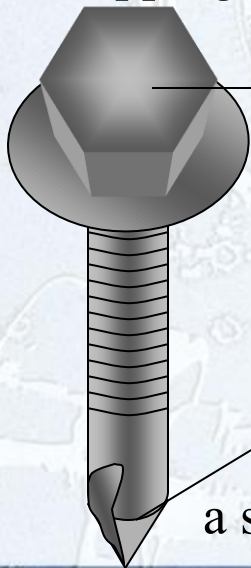
...AND THE RIVET IS IN PLACE

THREADED FASTENERS

- Wood Screws – Used to fasten materials to wood



- Self-tapping Screws – Used to secure sheet metal



Manufactured with hex heads...

...and drill tips...

... and installed using

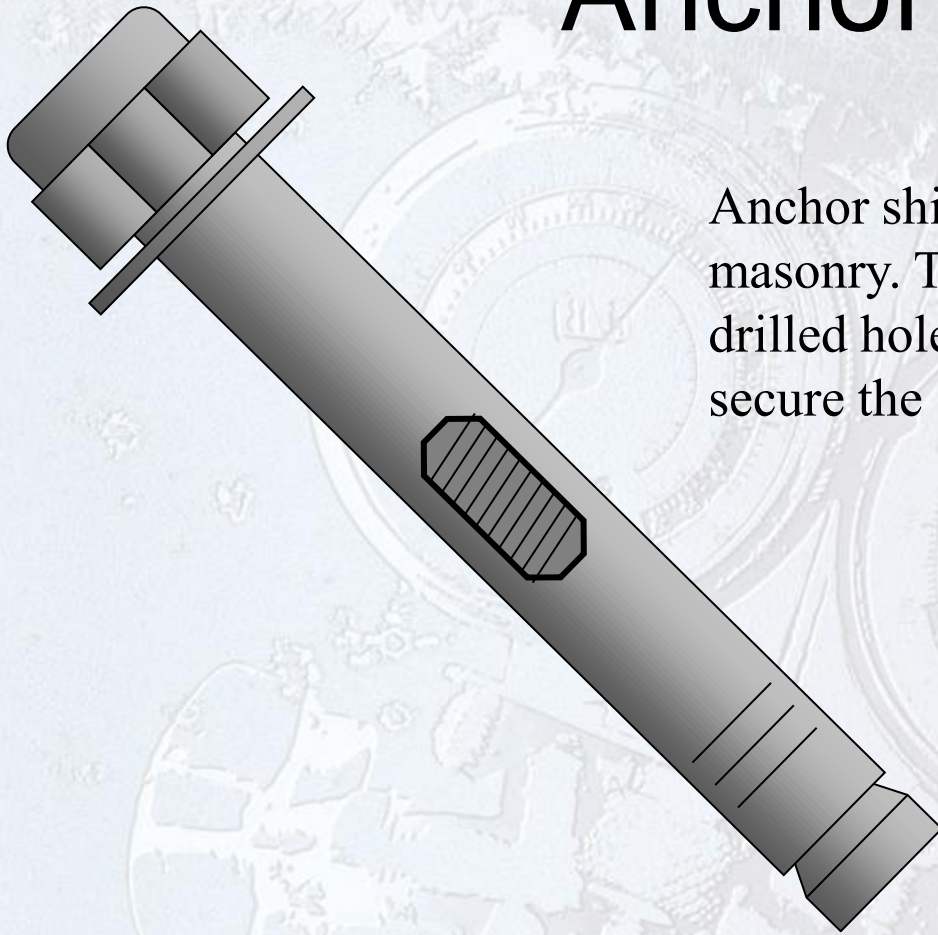
a special chuck that mounts in a drill



Other Screw Types

- Machine Screws or Bolts
 - Used in conjunction with nuts, which thread onto the screw
 - Manufactured with different head shapes including round and hex
- Set Screws
 - Can have different heads
 - Typically used to secure pulleys to motor or blower shafts

Anchor Shields

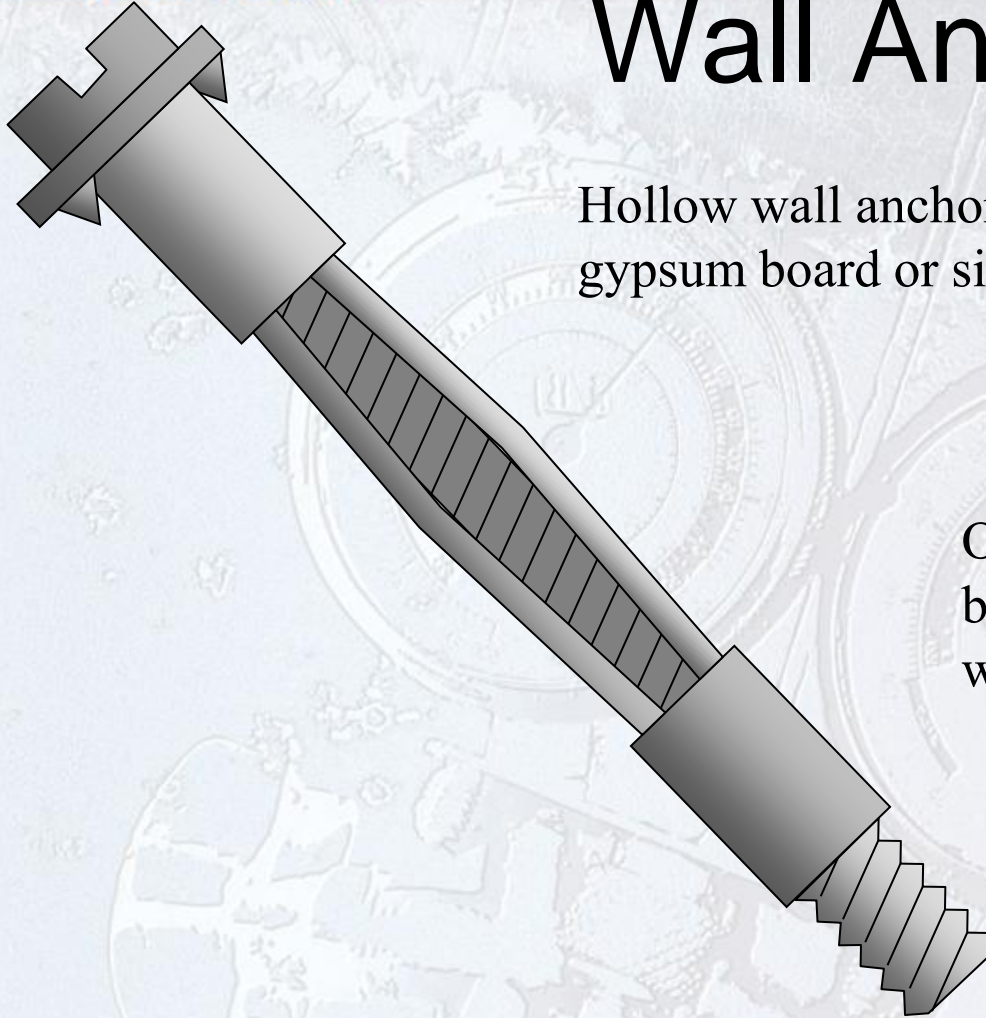


Anchor shields are often used to fasten objects to masonry. The shield is first inserted into a pre-drilled hole and then the bolt head is tightened to secure the shield.

Wall Anchors

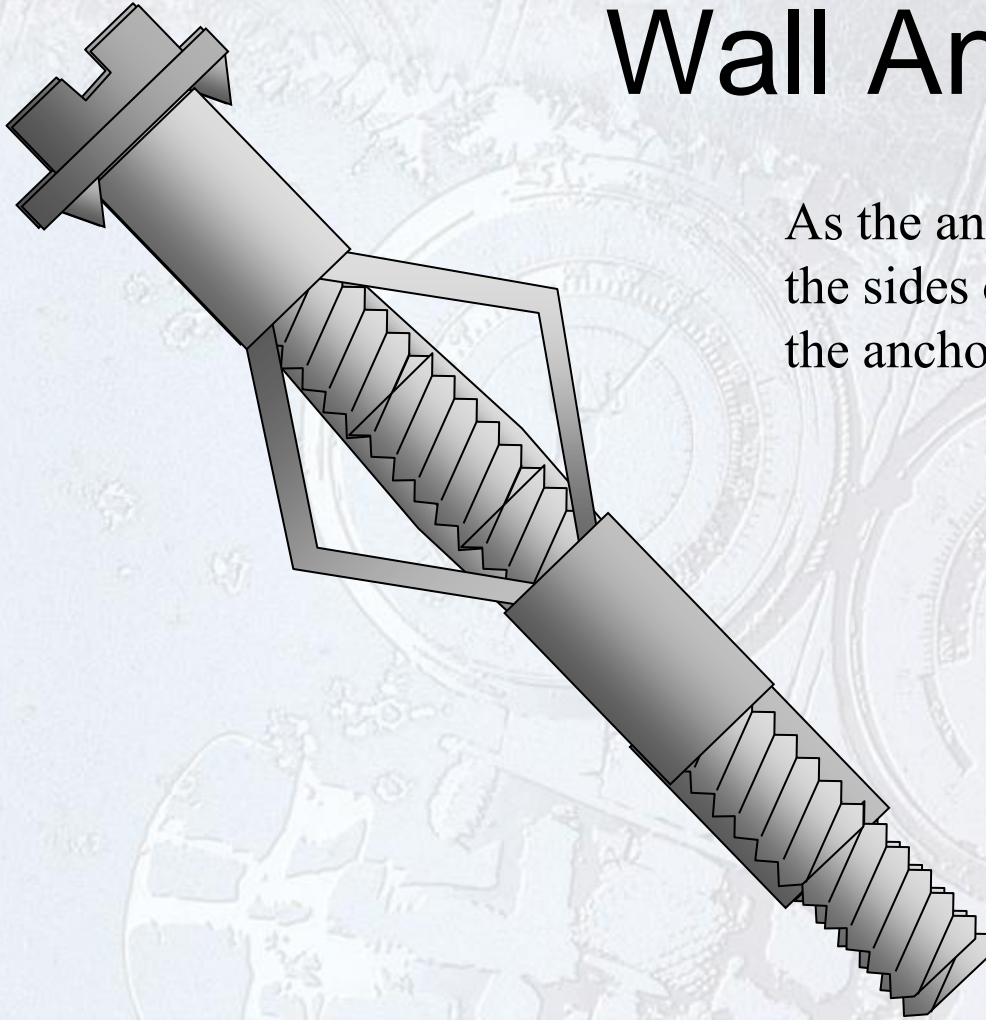
Hollow wall anchors can be used in plaster, sheetrock, gypsum board or similar material

Once the anchor is set, the screw can be removed as often as needed without affecting the anchor



Wall Anchors

As the anchor screw is tightened in the wall, the sides of the wall anchor expand, securing the anchor in the wall

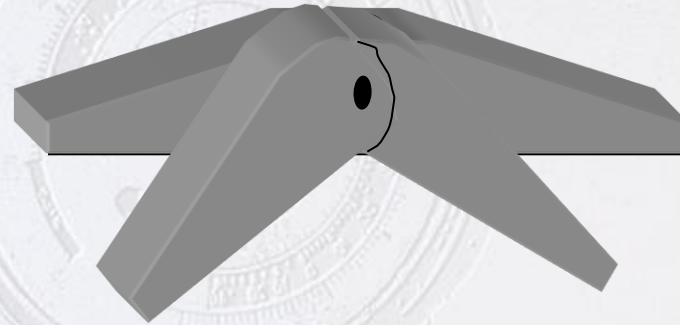


TOGGLE BOLTS



Use a bolt...

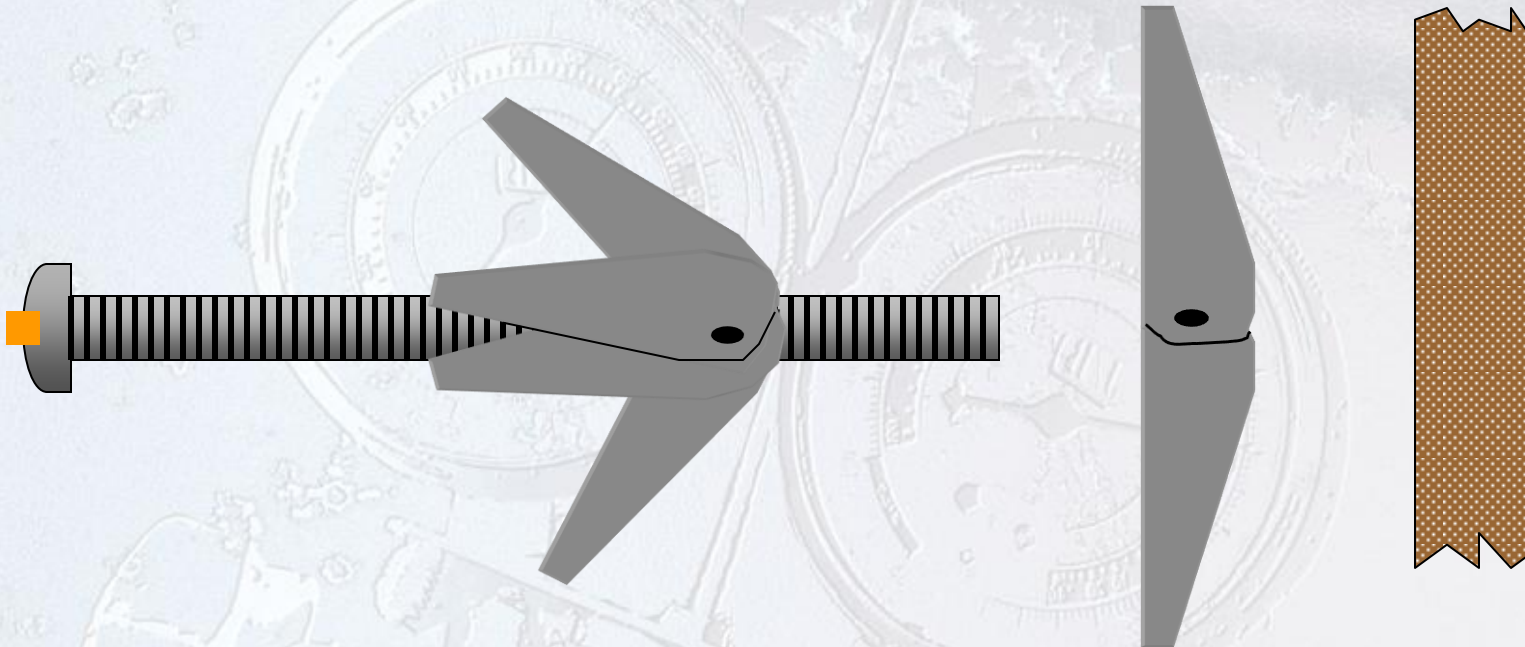
... and a spring-loaded, folding toggle



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THE BOLT IS THREADED INTO THE TOGGLE
TOGGLE IS THEN FOLDED TOWARD THE BOLT

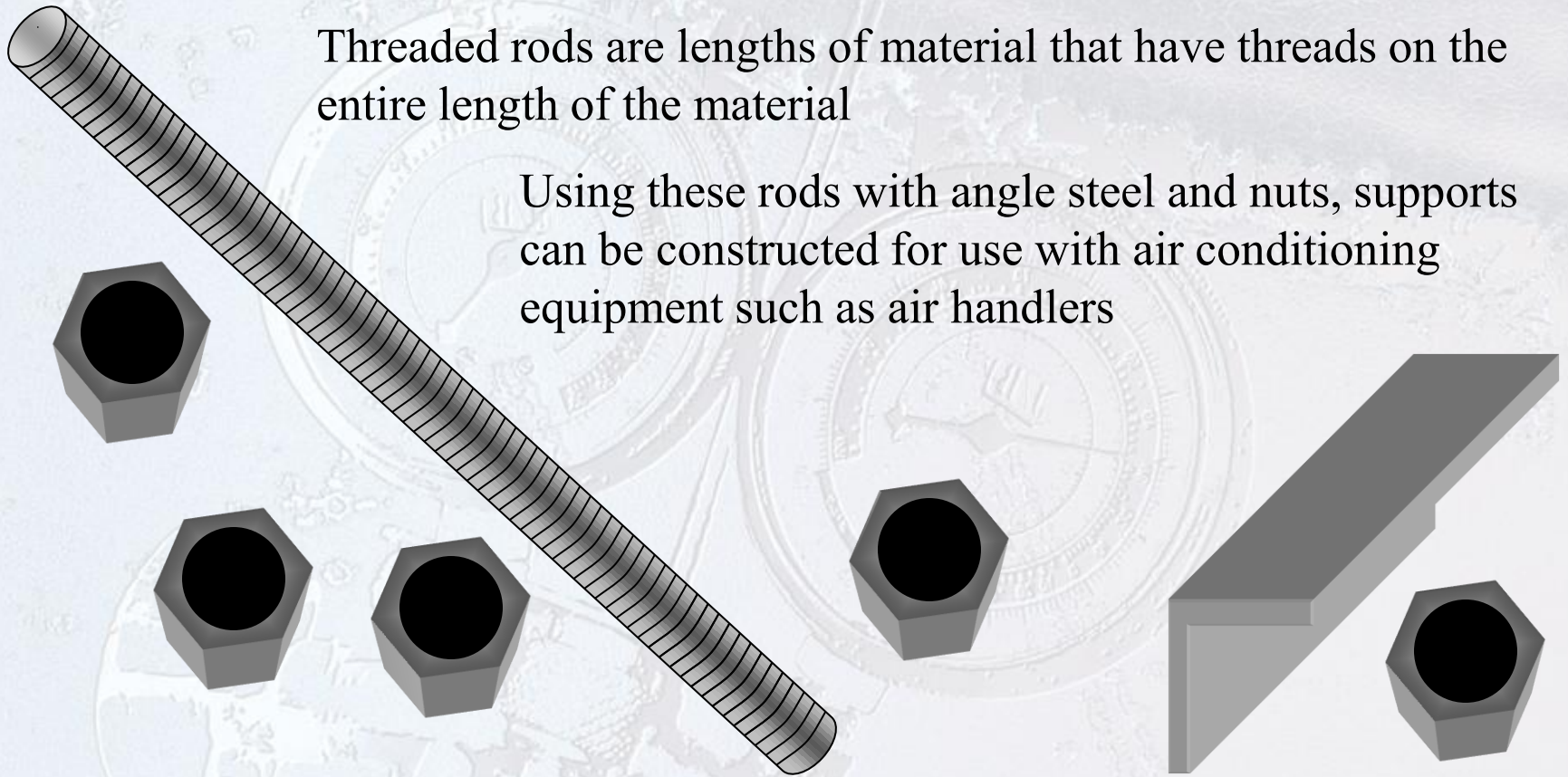


THE FOLDED TOGGLE IS INSERTED INTO THE WALL
TIGHTENING THE BOLT PULLS THE TOGGLE AGAINST THE WALL

THREADED ROD AND ANGLE STEEL

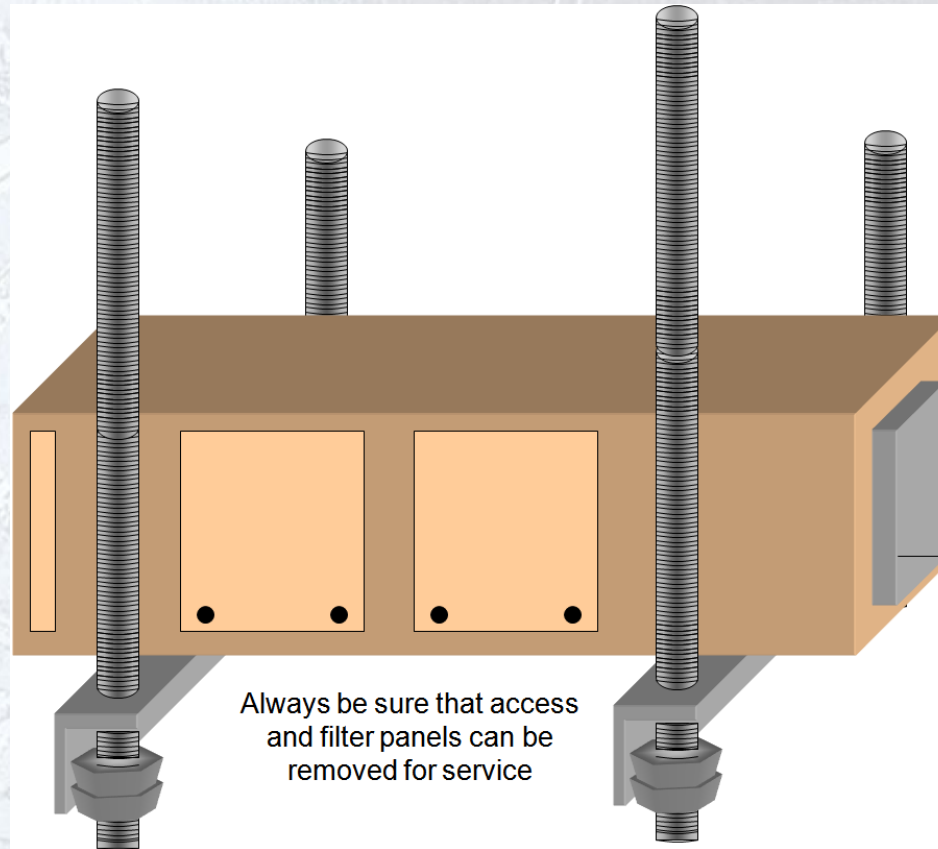
Threaded rods are lengths of material that have threads on the entire length of the material

Using these rods with angle steel and nuts, supports can be constructed for use with air conditioning equipment such as air handlers



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Other Fasteners...

- Cotter pins – Used to secure pins
- Pipe hooks – Wire bent to form a “U” to support pipes
- Pipe straps – Material used to mount pipes to a surface
- Perforated strap – Strapping material with spaced holes
- Nylon straps – Commonly used to secure flexible duct to sheet metal collars
- Grille clips – Used to mount supply registers and grilles
- Concrete fasteners – Used to secure materials to concrete