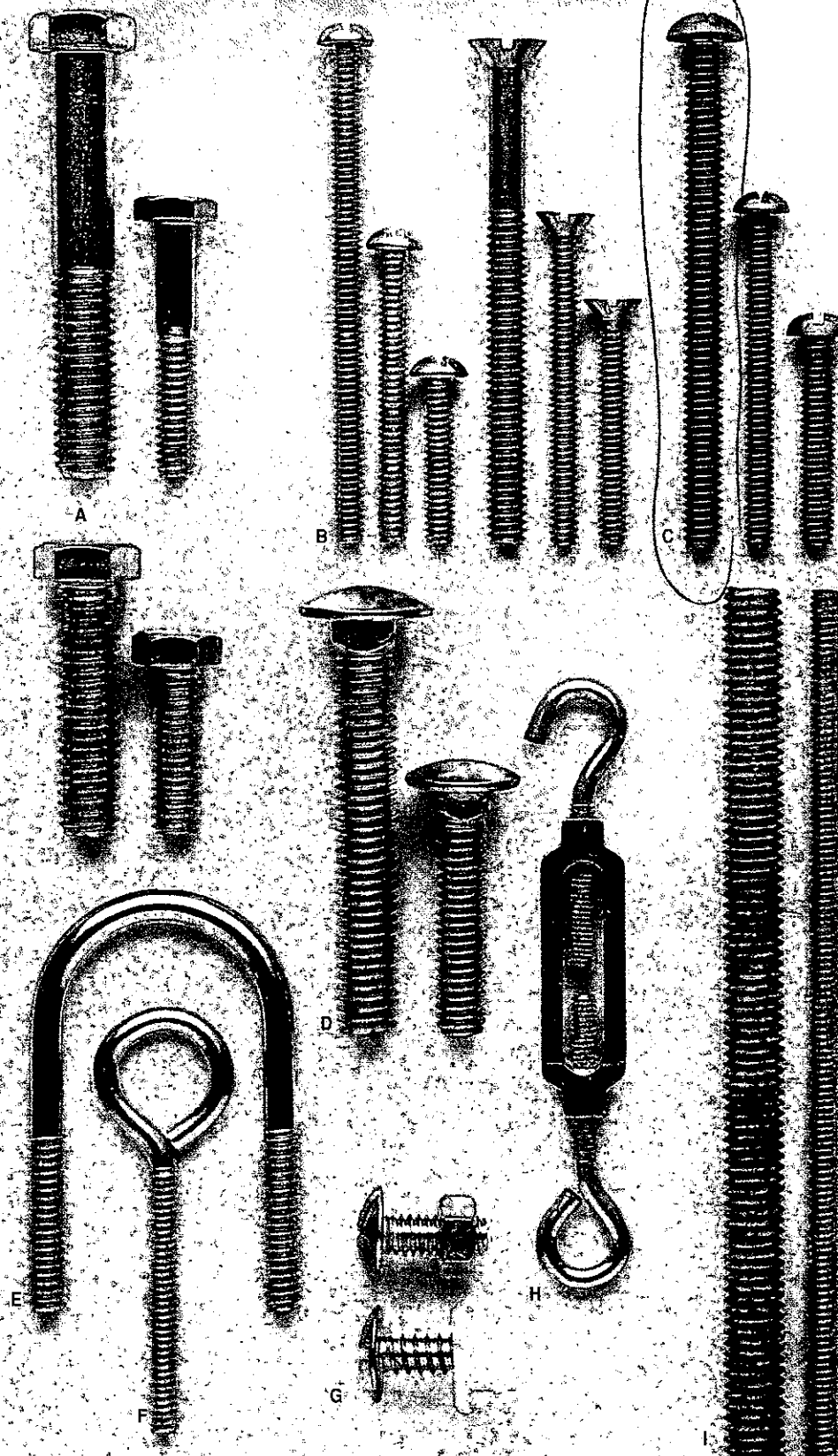


NUTS, BOLTS, AND WASHERS

Union Exhibit No. 44
Case No(s) GC 2006-0390
Date 2-26-09 Rptr KF

EX. 44



A bolt used with one or two washers and a nut or piece of threaded metal makes the strongest bond and is also easy to take apart without damaging the materials. A bolt should be long enough to protrude through the outside of the nut when assembled, letting at least one of the bolt's threads show. A bolt's size is generally given as the diameter in inches or gauge number, followed by the number of threads per inch, followed by the length of the bolt in inches. For example, a bolt that is marked $\frac{1}{4}$ -20 \times 1 is $\frac{1}{4}$ inch in diameter, has 20 threads per inch, and is 1 inch long. Bolts run from $\frac{3}{16}$ inch to 6 inches in length. Diameter and thread combinations run from #1-72 to $\frac{1}{2}$ -13. The larger the bolt, the fewer threads per inch.

Machine bolt (A) is a strong bolt with a hex or square head.

Stove bolt (B) has a round or flat slot head that can be countersunk.

Machine screw (C) is similar to the stove bolt, but with the other heads found in screws. It's called a screw because it's often screwed into threaded metal instead of a nut.

Carriage bolt (D) is used in wood-working and sheet-metal work. It has a smooth round head and square shoulders that sink into the wood or fit in a hole, keeping the bolt from turning.

U-bolt (E) holds pipes and other objects snug against a wall or ceiling.

Eye-bolt (F) holds wires, ropes, and other objects in place.

License-plate fastener (G) is a short machine screw with a nut or plastic backplate for attaching license plates.

Turnbuckle (H) has threaded hooks or eyes that move in or out when the sleeve is turned, exerting diagonal pull to keep a gate or screen straight.

Threaded rod (I), or all thread, joins objects over a span of up to 3 ft. It is available with fine or coarse threads.