METHOD AND APPARATUS FOR FORMING BUMPS FOR SEMICONDUCTOR INTERCONNECTIONS USING A WIRE BONDING MACHINE

Abstract of the Disclosure

The present invention is a method and apparatus for forming a bump for semiconductor interconnect applications, such as reverse wire bonding or stud bumping for flip chip interconnections. The bump is formed by (1) ball bonding at the bump site, (2) raising the capillary a predetermined height after forming the ball bond with the wire paying out of the capillary tip, (3) moving the capillary laterally a predetermined distance, preferably in a direction toward the site of other end of the wire loop, if the bump is to be used as the platform for a stitch bond of a wire loop, (4) raising the capillary further, and (5) moving the capillary diagonally downwardly and in the opposite direction of the first lateral motion. The wire is then severed by raising the capillary, closing the clamps and raising the capillary again to snap the wire pigtail off at the bump.