

ABSTRACT

UNIVERSAL SOCKET DEVICE

A universal socket is described which is suitable for use upon a myriad of fastening means whereupon at least a plurality of pins are capable of longitudinal axial movement in concert and in conformity with contact with a workpiece. This result is achieved by the incorporation of a biasing mechanism on the pins which biases the pins in a normally extended position, but which permits movement to a second retracted position. In one embodiment, the cross-sectional area of the pins is decreased in either a linear or non-linear manner from the outer periphery to the center of the socket. In operation, as the workpiece is inserted into the socket, the pins are moved in a longitudinal axial direction from their normally extended position to the second retracted position in conformity with the shape of the workpiece. Upon the application of a torque force to the closed end of the socket fitted with a drive means, the workpiece is either moved clockwise or counterclockwise depending upon the nature of the operation to be performed, i.e., tightening or loosening. Upon removal of the workpiece, the pins return to their original extended position due to the biasing mechanism, typically being a spring positioned around a reduced diameter uppermost end of the pins. In one configuration of the pins, accommodation is made for larger multi-sided workpieces than would normally be expected to be inserted into the socket based on the available surface area of the pins through the incorporation of triangular shaped free space within the socket adjacent to the pins. This permits larger sized 4-sided and 6-sided nuts and bolts to be effectively removed or tightened for example.

(FIGURE 1 IS SUGGESTED FOR PUBLICATION)