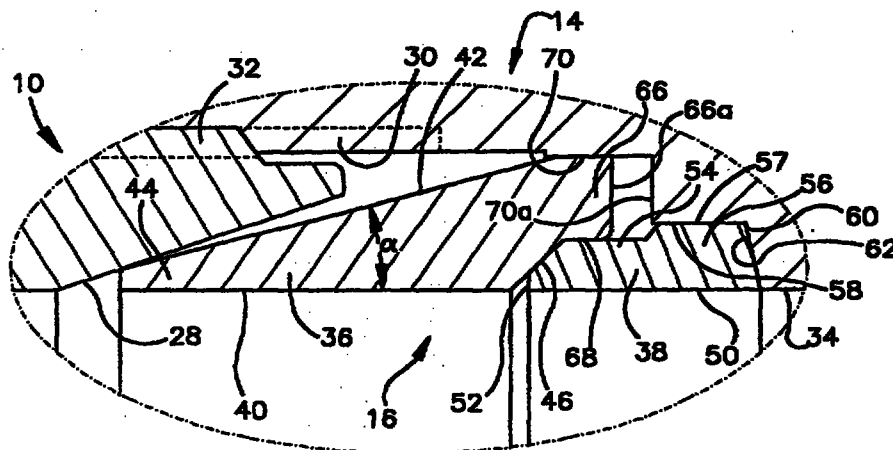


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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(54) Title: **PHASE-CONTROLLED SEQUENTIAL-GRIPPING TUBE FITTING**

## (57) Abstract

A phase-controlled, sequential-gripping tube fitting includes a main fitting body (10) having a tube end receiving opening (24) with a tapered camming mouth (28) forming the entry to the opening. A front ferrule (36) with a tapered forward nose surface (44) is engaged with the camming mouth (28) and includes a rear surface (46) with a conically tapered recess extending forwardly toward the nose surface (44). Extending into the conically tapered recess (46) of the front ferrule (36) is a rear ferrule (38) having a rear force receiving surface (60). A coupling nut (14) is threadably connected to the main body (10) and has a force applying face (62) engaged with the rear force receiving surface (60) of the rear ferrule (38). An arrangement is provided to control outward buckling of the rear ferrule (38). The arrangement includes a central body (54) located between the nose portion (52) and the rear force receiving surface (60) of the rear ferrule (38). A cylindrical flange (66) extends rearwardly from the front ferrule (36) at a location radially outwardly of the rear recess (46). The flange (66) has a cylindrical interior surface (68) that closely surrounds the central body (54) of the rear ferrule (38). The central body (54) is of a length such that engagement between the coupling nut (14) and the axial end face (66a) of the cylindrical flange of the front ferrule (36) is not possible at any point during make-up.