Figure 5 is a cross-sectional end view of the cable of Figure 2 in position to be closed in a sheath comprising a trough and a cover, which are outwardly concave,

Figure 6 is a view similar to Figure 5, showing the sheath closed,

Figure 7 is a similar cross-sectional view of three cables in a tri-radial carrier having an armoured casing.

Referring to Figures 2 to 4 of the drawings, the cable thereshown is comprised of six long, thin and narrow electrode plates or strips 101, 102, 103, 104, 105, 106. Typically they are 5km long, 10cm wide and 0.5mm thick of aluminium or copper foil. Individual ones of them are separated by 0.25mm thick polypropylene ribbons 107 insulating the individual strips from each other in an insulating manner. The assembly of strips and ribbons is contained within an insulating sheath 108.

At opposite ends (one end 111 is shown), the alternate strips are cut off short and the remaining fingers 114,115 are joined together and to connection wires 116,117, typically by riveting 110, 118. The wires are insulated and the insulating sheath extends onto the insulation of the wires, whereby the entire cable is insulated for safe contact with foreign objects between the ends.

To maintain the electrode strips in contact with their separation ribbons, the cable, including the insulation sheath is held within an outer sleeve 121 made up of shallow channel-shaped trough 122 with over-hanging rims 123 and a closure tongue 124 with up-standing lips 125. The trough and the tongue of the sleeve are or plastics material extrusions, moulded with outwardly concave curvature. For use, with the cable in the trough, the tongue is pushed into the trough, with both being flattened. The lips 125 engage under the rims, holding the curvature flattened and applying pressure to hold the strips against dielectric ribbons and the capacitance of the cable high.

For a single phase supply, two pairs of cables are required. They can be bound together flat and edge-to-edge within an earth screen. The edge to edge arrangement mitigates against capacitive interference between cables. Alternatively they can be laid against the opposite sides of a hollow square extrusion of dielectric material, again to mitigate interference and again within an earth screen.

CLAIMS:

1. A multi-phase cable comprising a plurality of capacitive cables, wherein each capacitive cable comprises:

- at least two elongate electrode plates of one polarity, these plates being interconnected at one end of the cable;
- at least two elongate electrode plates of another polarity, these plates being:
  - interdigitated with the plates of the one polarity and being
  - interconnected at the other end of the cable; and
- dielectric material between the interdigitated plates,

wherein the plates are collectively encased in an outer casing or sheath.

2. The multi-phase cable of claim 1, wherein the interdigitated plates are housed between resilient binding members, to retain the plates close to each other for maintained capacitance.

3. The multi-phase cable of claim 2, wherein the resilient binding members are adapted to be held together along their edges.

4. The multi-phase cable of claim 3, wherein the resilient binding members comprise a trough and tongue each having interengaging formations adapted to hold them together.

5. The multi-phase cable of claim 2, wherein the resilient binding members have a free curvature away from the plates, whereby the binding members are flattened when interengaged and apply pressure across the area of the plates pressing them in towards each other.

6. The multi-phase cable of any one of claims 1 to 5, wherein the individual capacitive cables are placed parallel to each other.

7. The multi-phase cable of any one of claims 1 to 5, wherein the individual capacitive cables are arranged to radiate from a central axis, forming radiating capacitive cables.

8. The multi-phase cable of claim 7, including divergent spacers between the radiating capacitive cables.

9. The multi-phase cable of claim 8, wherein the divergent spacers are circular cylindrical in shape, squeezed to divergent shape when in place.

10. The multi-phase cable of claim 8, wherein the divergent spacers are individual 120º divergent plastics material extrusions or a single 360º extrusion with flat cable slots set at 120º.

11. The multi-phase cable of any preceding claim, including a central earth wire and/or an outer casing of helically arranged earth wires.