

METHODS AND APPARATUSES FOR COMPACTING SOIL AND GRANULAR MATERIALS

ABSTRACT

Methods and apparatuses for compacting soil and granular materials are disclosed. In some embodiments, the soil compaction apparatuses include an arrangement of diametric expansion elements that, in their expanded state, form a larger compaction surface. In another embodiment, a compaction chamber can be provided with diametric restriction elements and a flow-through passage in the upper portion of the chamber exterior of a drive shaft. The diametric expansion or restriction elements can be fabricated from, for example, individual chains, cables, or wire rope, or a lattice of vertically and horizontally connected chains, cables, or wire rope. Embodiments of the soil compaction apparatus include, but are not limited to, closed-ended driving shafts, open-ended driving shafts, flow-through passages, no flow-through passages, removable rings for holding the diametric expansion/restriction elements, and any combinations thereof.

Fig. 8A