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## (54) Lightened anchoring heads.

(57) Anchoring head for positioning and spacing the strands or cables forming an anchoring device comprising a body (21) of truncated pyramid shape and at the end of the major base provided with brackets (27) capable of reacting to the tractive stress of each individual strand. It is also contemplated that the body (21) of truncated pyramid shape is provided with at least one tab or fin (24, 25, 26), on which the stress acting on the anchoring head (20) is partially relieved. In case of a plurality of tabs or fins, it is provided that the area thereof, as measured in a plane perpendicular to the axis (A-A) of the head, is nearly constant.

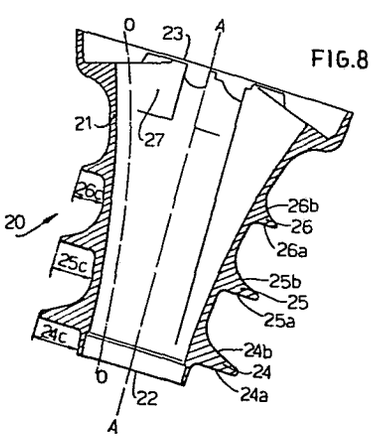


FIG.8

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"LIGHTENED ANCHORING HEADS"

This invention relates to heads for positioning and spacing strands or cables operating for compressing, or anyhow subjecting to a stress metal or concrete structures when such strands or cables are pulled by means of jacks or the like.

The heads hitherto used are formed of a shaped crown, on which the bearings are provided for the individual anchorings of the cables or strands, the projection of each bearing in longitudinal direction of the head involving the concrete or the head cast iron, so that said cast iron with which the head is formed is stressed only to compression.

Heads thus made are extremely costly because of the high weight

thereof.

Therefore, it is the object of the present invention to provide lightened heads, however allowing a sufficient spacing of the strands or cables and at the same time a good load transmission on the metal or concrete structure.

The above object has been accomplished by providing the head of substantially truncated pyramid shape and provided at the end of the major base with brackets as bearings for the anchorings, which react to the bending or flexure caused by the tractive stress of each individual strand or cable. Thus, heads are obtained with reduced front impression. Therefore, to avoid an undue stress on the supporting structure for the stresses under plate, it is convenient to provide in the truncated pyramid body of the head one or more tabs or fins distributing the stress or tractive stress on the structure to be stressed. Generally, it is preferred that the tab or fin surface is such that the stresses are uniformly distributed.

The present invention will now be better explained with reference to some exemplary embodiments that have been shown in the accompanying drawings, in which:

Fig. 1 is a front view from the major base of the head according to the present invention;

Fig. 2 is a sectional view taken along line 2-2 of Fig. 1;

Fig. 3 is a sectional view taken along line 3-3 of Fig. 2;

Fig. 4 is a sectional view taken along line 4-4 of Fig. 1;

Fig. 5 is a sectional view taken along line 5-5 of Fig. 2;

Fig. 6 is a view taken along line 6-6 of Fig. 2;

Fig. 7 is a front view of a head for five strands;

Fig. 8 is a sectional view taken along line 8-8 of Fig. 7; and

Fig. 9 is a front view of a head for twelve strands.

Referring first to Figs. 1 to 6, it will be seen that reference numeral 10 generally denotes a head comprising a body 11 externally provided with ribs 14 for improving the adhesion of body 11 of said head 10 to the concrete, where the head here shown should be mounted within a structure made with this material. The head, here shown by way of example, is of truncated pyramid shape with triangular base, since the passage is provided therein for only three cables or strands, the axes of which are indicated at O. The minor base of the head is of the shape shown in the sectional view of Fig. 3, then gradually takes an increasing triangular shape, as shown in Figs. 4, 5 and 6.

As it will be seen from the drawings, the point of application for the forces exerted by the strands is coincident with the axis of the latter, which has been indicated at O. These forces cause a bending stress or reaction in each individual bracket 17, so that these brackets should be correspondingly calculated to withstand this stress.

Referring now to Figs. 7 and 8, it will be seen that a head 20 according to the present invention, provided for example for five strands or cables, comprises a body 21 having an inlet port 22 for the anchoring strands or cable, and an outlet port 23, the latter remaining the only one visible at the end of cast. The five strands will have the axis arranged along lines O-O, so that bending reacting brackets 27 and 28 will be also here formed. In Fig. 7, the head body 21 has been shown by dotted lines. Generally, this

body 21 is of about truncated pyramid shape with rounded corners and on its outer surface has fins or tabs 24, 25, 26 made with a surface 24a, 25a and 26a extending in a plane perpendicular to the axis A-A of the head. This surface is calculated as bearing surface for the head to the concrete. Obviously, these fins or tabs have to be calculated to withstand the thrust acting thereon, particularly are such as not to break at the connecting zone thereof to said body 21, and therefore will rearwardly have an inclined surface 24b, 25b and 26b for resisting the moment developed by the bearing.

The bearing surface 24a for the fins or tabs 24 is of circular crown shape having a larger thickness 24c than thickness 25c which, in turn, is larger than the thickness 26c of the third fin or tab. Since the fins or tabs are arranged at different heights on a body of truncated pyramid shape, the dimensions thereof are preferably such that the bearing surfaces 24a, 25a and 26a are of nearly constant area. Thus, the subdivision or distribution of the load on the concrete structure will be quite uniform. Fig. 9 shows a head 30 having a body 31. This head is provided for twelve strands, each of which at pulling position has the axis arranged at O. In this case the brackets have been shown at 37 and 38.

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C L A I M S

1. An anchoring head for positioning and spacing the strands or cables forming an anchoring device, characterized in that the body (11, 21, 31) is of truncated pyramid shape and at the end of the major base provided with brackets (17; 27, 28; 37, 38) capable of reacting to the tractive stress of each individual strand.

2. An anchoring head according to Claim 1, characterized in that the body (21) of truncated pyramid shape is externally provided with at least one fin or tab (24, 25, 26), on which the stress acting on the anchoring head (20) is partially relieved.

3. An anchoring head according to Claim 2, characterized in that one (24a, 25a, 26a) of the surfaces of each fin or tab (24, 25, 26) is contained in a plane perpendicular to the axis (A-A) of the head.

4. A head according to Claim 2 or 3, characterized in that said fins or tabs (24, 25, 26) are more than one and the area thereof, as measured in a plane perpendicular to the axis (A-A) of the head, is nearly constant.

FIG.2

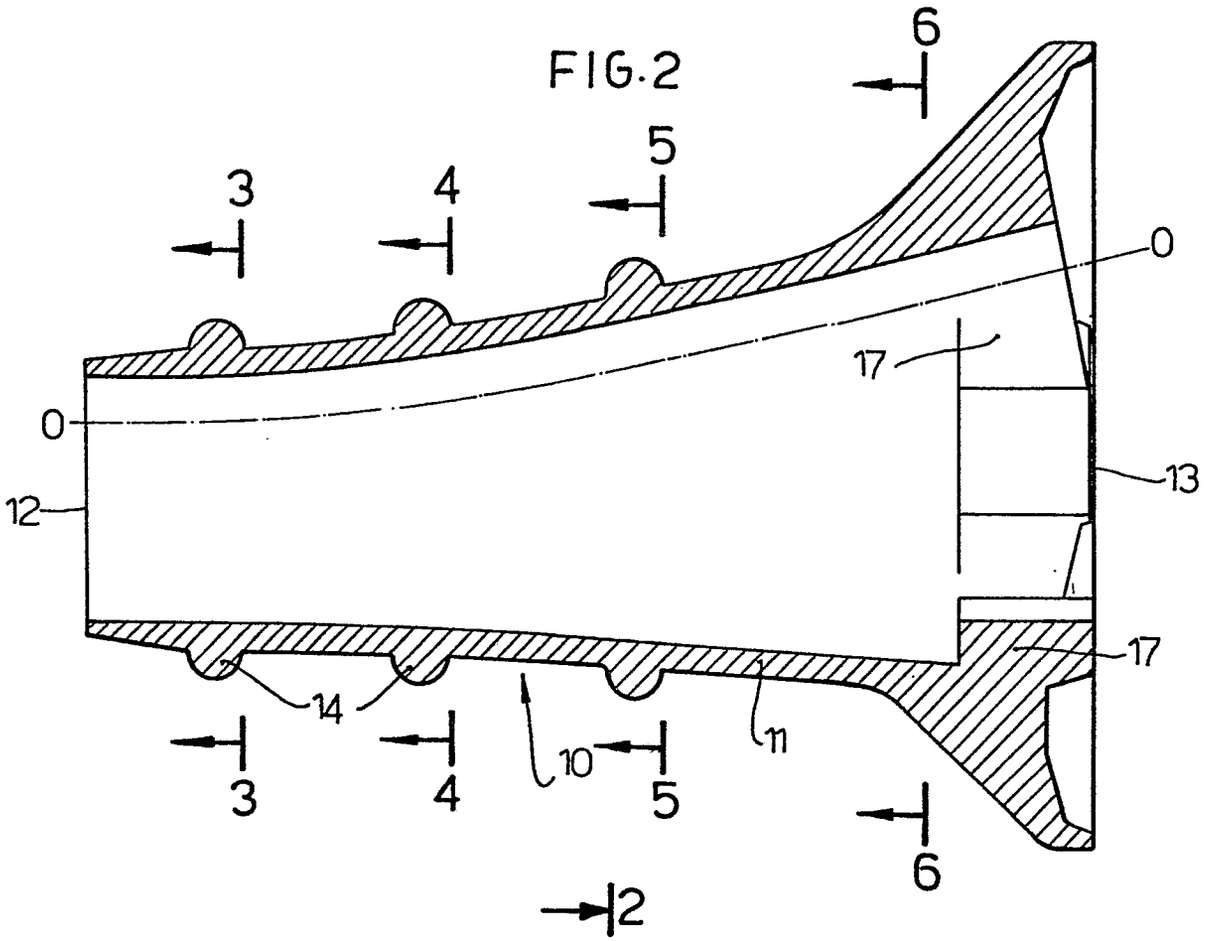



FIG.1

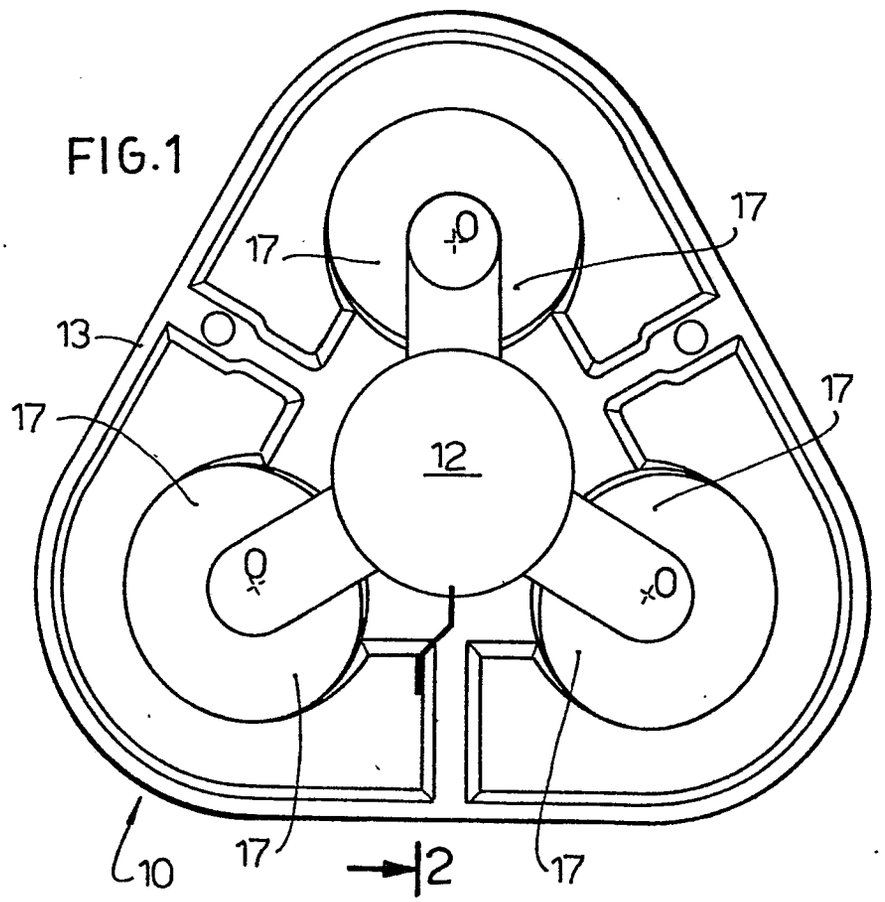


FIG.3

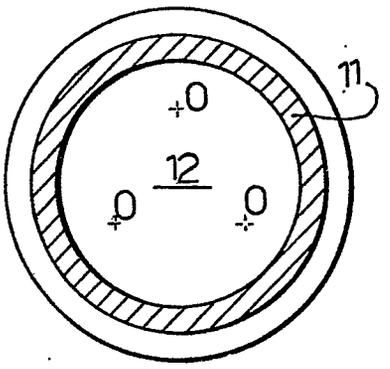



FIG.4

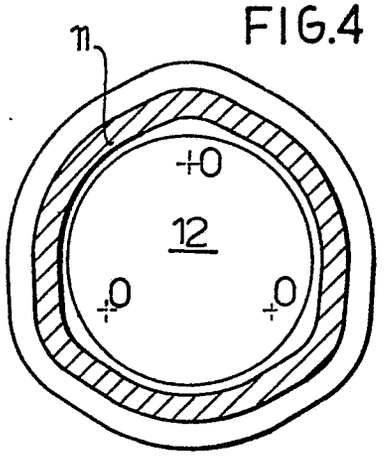



FIG.9

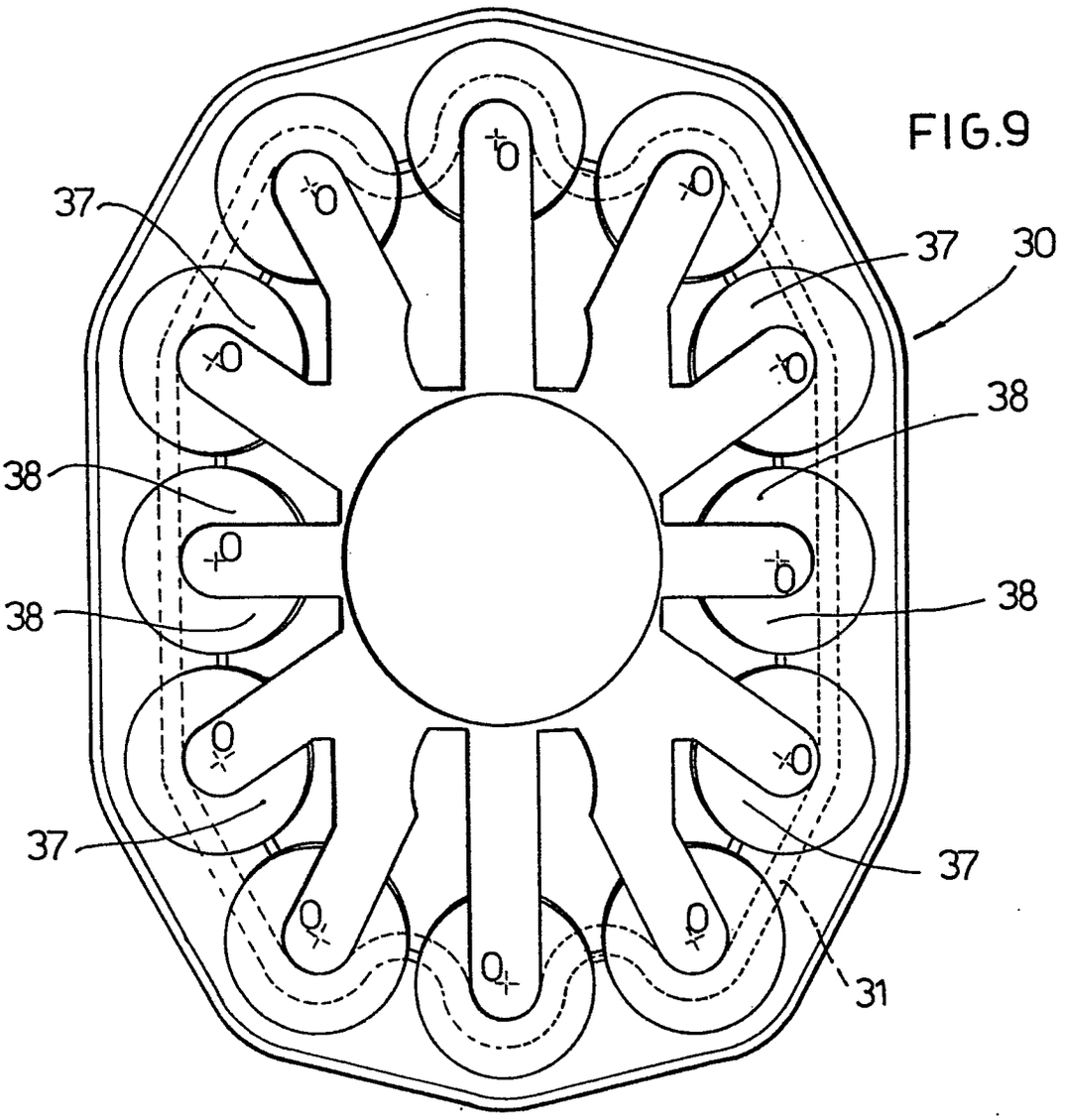


FIG.8

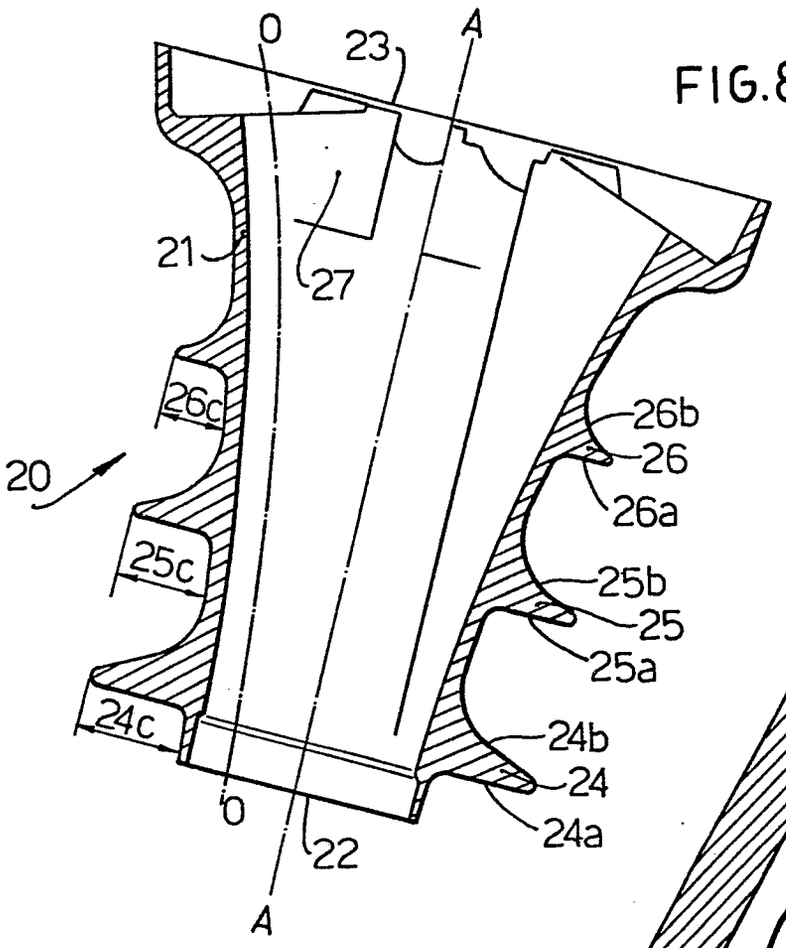



FIG.6

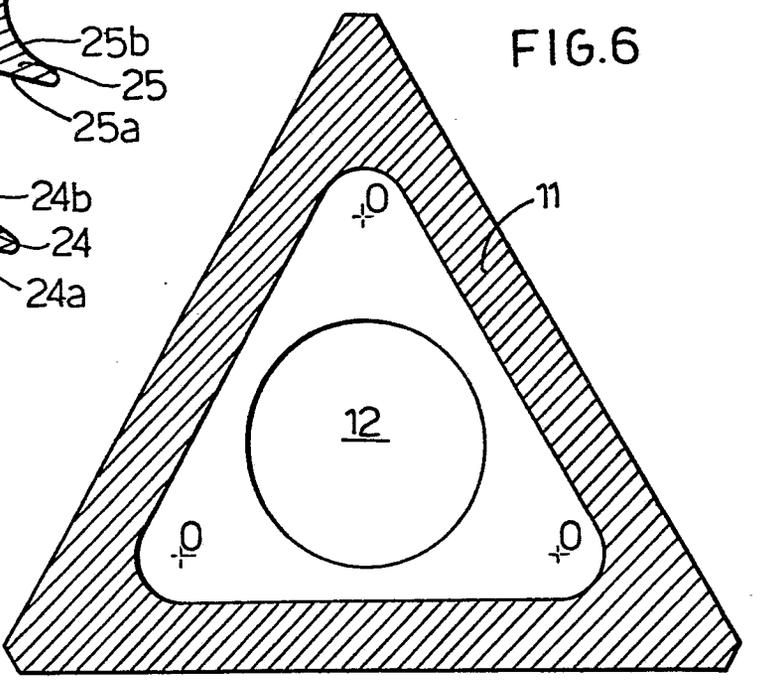
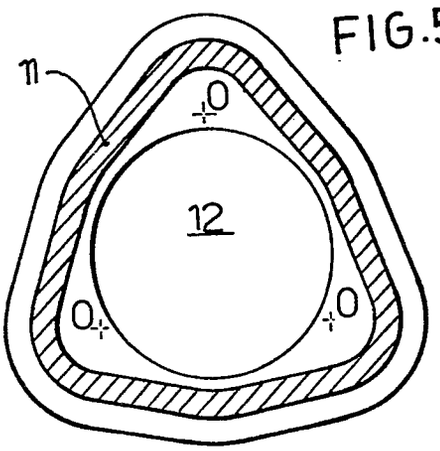



FIG.5



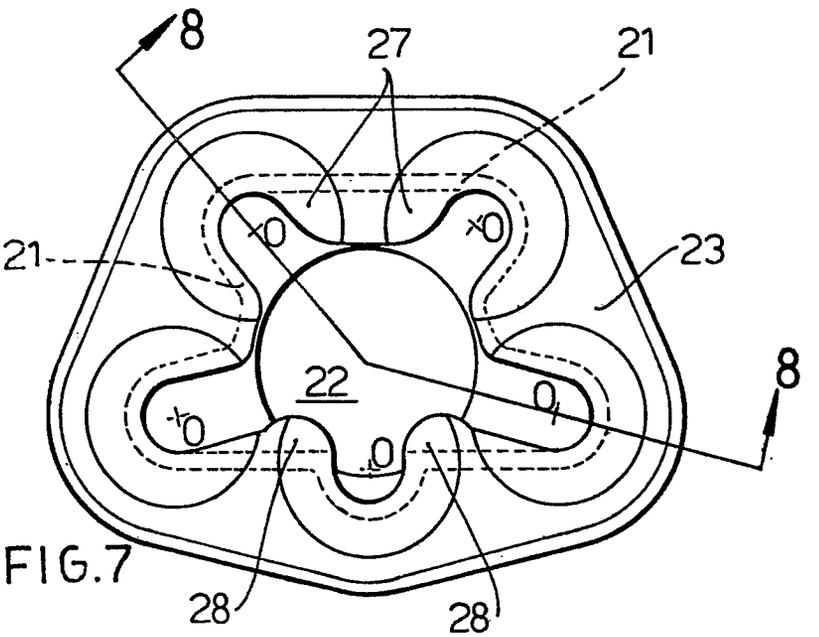




FIG.7