BOLT ANCHOR FOR CONCRETE

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ABSTRACT OF THE DISCLOSURE

The invention pertains to a bolt anchor which is adapted
to be attached to a concrete form and to be embedded
into the concrete after the concrete has set. The device
comprises a one piece shell of thermoplastic material
which has a bolt receiving socket therein by means of
which the shell can be bolted to a concrete form before
the concrete is poured. The shell is also provided with
means for interlocking it to the concrete so as to prevent
rotation with respect to the concrete after the concrete
has set.

Background of the invention

Anchoring devices heretofore used for embedment in
cement have generally embodied metallic shells which
are subject to deterioration by rust and which are rela-
tively heavy and expensive to manufacture. Additionally,
the shape of prior devices has mitigated against the at-
tainment of an effective interlock with the concrete after
the concrete has set.

Summary of the invention

The invention embodies a one piece shell preferably of
thermoplastic material which has a threaded socket open-
ing from one end for receiving the shank of the bolt by
means of which the shell may be attached to a concrete
form before the concrete is poured. The shell is also pro-
vided with flanges which are so formed as to provide a
firm and effective interlock with the concrete so as to
prevent rotation of the anchor with respect to the concrete
after the form has been removed.

Brief description of the drawings

In the drawings,
5 FIG. 1 is a side elevation of an anchoring device em-
bodying the present invention;
FIG. 2 is an end elevation as viewed from the right hand
end of FIG. 1;
FIG. 3 is a section taken on a plane indicated by the
line 3—3 of FIG. 2.

Description of the preferred embodiment

The anchoring device of the present invention com-
prises a one piece shell preferably of thermoplastic ma-
terial, such as polyvinylchloride, having a body portion
10, a head flange 11 and a base flange 12 disposed at the
ends of the body portion. The body portion also has an
internally threaded socket 15 which is open at 16 adjacent
the flange 11, and is adapted to receive the threaded shank
20 of a bolt 21 for clamping it to a concrete form 22 in
the desired location. The body portion preferably em-
bodying the shape of a right frustum, with the base ter-
minaling in the flange 12.

To lock the shell after the concrete has been poured
around it, the flange 11 may be provided with one or more
5 peripheral indentations 30 which extend through the
flange in an axial direction and are adapted to receive
concrete which flows around the shell during the pouring
operation. Additionally, the flange 12 preferably has an
oblate form with the flattened portions 31 and 32 pref-
erably disposed in alignment with the recesses 30. Such
formations permit the concrete to flow readily entirely
around the shell thereby to form an effective interlock
which inhibits rotation of the shell with respect to the
concrete.

After the concrete has set, the bolt 21 is removed with
the form 22, whereupon the socket 20 presents a clean
surface for receiving the bolt by means of which an article
is to be fastened to the concrete.

By making the anchor of thermoplastic material the
shell will be relatively light in weight and yet will possess
sufficient strength and rigidity to serve adequately as a
bolt anchor within concrete.

I claim:
1. An anchoring device for use in concrete comprising,
a shell of polymeric material having an internally thread-
ed socket adapted to receive a threaded member therein,
said socket being open at one end and closed at the other
end, said shell including a frustum-shaped body portion
with one end of said body portion being larger in trans-
verse dimension than the other end, said body portion
having radially outwardly projecting flanges disposed at
opposite ends thereof, one of said flanges being non-
circular in configuration and including oppositely disposed
generally flattened portions adapted for abutting engage-
ment with said concrete to prevent axial rotation of one
end of said shell, and the other of said flanges including
at least one peripheral recess opening radially outwardly
and adapted to be filled with concrete to lock the other
end of said shell against rotation.

2. An anchoring device in accordance with claim 1,
wherein said socket is generally uniform in longitudinal
cross section, and the transverse dimension of said body
being increased in a direction away from said open end
whereby said axial movement is prevented when in the
embedded position.

3. An anchoring device in accordance with claim 1,
wherein the number of recesses in the other of said flanges
is equal to the number of flattened portions, and said
recesses being centrally aligned with said flattened por-
tions.

4. An anchoring device adapted for embedding in con-
crete comprising, a shell of plastic material having an
internally threaded socket adapted to receive a threaded
member therein, said socket being open at one end and
closed at the other end, said shell including a generally
right frustum-shaped body portion with one end of said
body having a larger transverse dimension than the other
end, said body portion having radially outwardly pro-
jecting flanges disposed at the opposite ends thereof, one
of said flanges being oblate in configuration including
diametrically opposed generally flattened portions, the
other of said flanges including peripheral recesses open-

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3. An anchoring device in accordance with claim 4, wherein said shell is made from a thermoplastic material.

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