

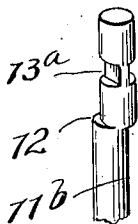
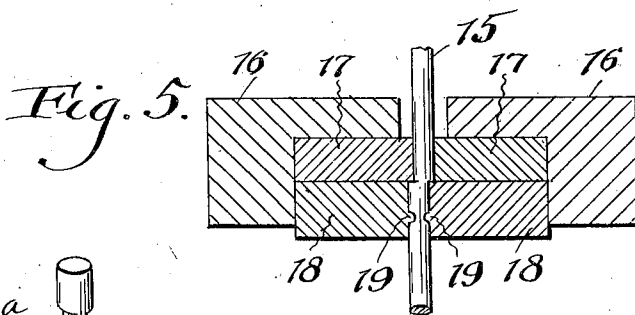
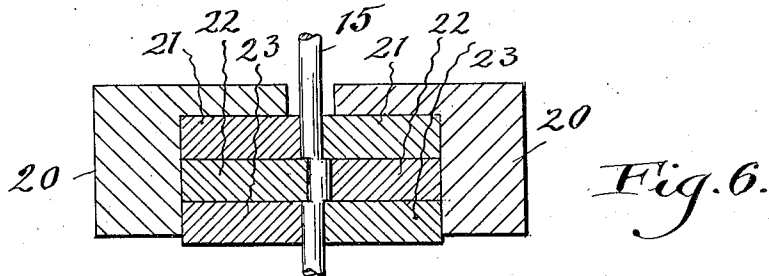
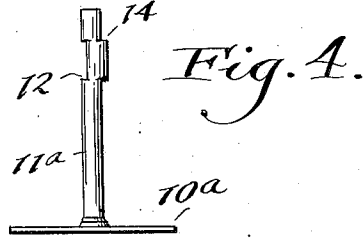
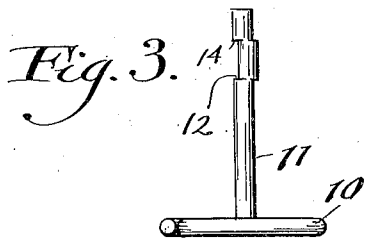
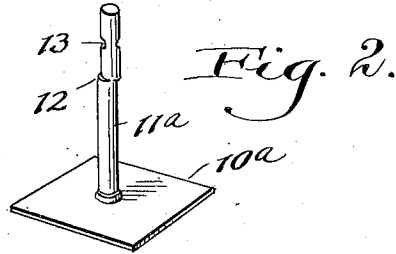
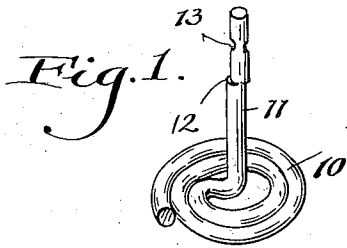
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S. H. GIBSON

CHAPLET

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UNITED STATES PATENT OFFICE.

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CHAPLET.

Application filed January 26, 1924. Serial No. 688,679.

To all whom it may concern:

Be it known that I, SAMUEL H. GIBSON, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Chaplets, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in core supporting chaplets.

It is common practice to support cores in molds by means of so-called chaplets, the type or form of which depends to a large extent upon the castings to be made. A common and inexpensive form of chaplet consists of a wire stem extending up from a head or base, the latter being adapted to be set into the mold and the end of the stem being adapted to engage and support the core. After the casting is made, portions of the chaplets extend out from the casting, and these are intended to be broken off in a tumbler or otherwise, and to facilitate the breaking off of the protruding portions of the chaplets the stems have been indented or nicked on opposite sides.

It has been found, however, that the indenting or nicking of the chaplet stems does not answer the requirements, for very often in spite of the indentations it is difficult to break off the protruding portions which have a tendency to bend instead of break, particularly if the wire is bent in a plane at right angles to the indentations.

The object of the present invention is to form the chaplet stems in such a way that the protruding portions are easily broken off. I accomplish this by partially shearing the stems, which produces a lateral offset at the point where the break is to occur. Beyond the shear, the portion of the same which is to be embedded in the metal is preferably deformed or mutilated to form an interlock or anchor with the cast metal in the event the same is not fused when the metal to be cast flows around it. This deformation to form the interlock or anchor can be produced in different ways as by indenting the portion of the stem which is offset, but preferably by giving the stem a second partial shear and therefore a second lateral offset, this being preferable for the reason that thereby a more positive anchorage is secured.

The invention may be here briefly summarized as consisting in certain novel improvements in the construction or form of chaplets which will be described in the specification and pointed out in the appended claims.

In the accompanying sheet of drawings, Fig. 1 is a perspective view of a chaplet formed in accordance with my invention, with the head of the chaplet formed of a wire coil integral with the stem. Fig. 2 shows a modification wherein the head is in the form of a flat thin plate riveted or otherwise secured to one end of the stem; Figs. 3 and 4 are side views of stems of the type shown in Figs. 1 and 2, but with anchorage deformations produced by a partial shearing instead of indenting as in Figs. 1 and 2; Fig. 5 shows dies which may be utilized in the production of chaplets or chaplet stems partially sheared and indented as shown in Figs. 1 and 2; Fig. 6 is a similar view showing the dies which may be utilized when the stems are given a double shear, one for ease of breakage and the other for anchorage in the cast metal; and Fig. 7 shows a portion of a chaplet stem with a further modification in the form of the anchorage deformation.

In Figs. 1 and 3 the chaplet base 10 is formed of coiled wire integral with the stem 11, and in Figs. 2 and 4 the base 10^a is a flat plate secured to the end of the stem 11^a. These two views illustrate two different bases commonly used, but other forms of bases may be employed if desired.

The principal feature of the invention is a partial shear which is given to the stems 11 or 11^a, as indicated at 12, to facilitate to a greater degree than heretofore, the breaking off of the protruding portion, the shear 12 being intended to be at the outer surface of the casting, and the portion beyond the shear, i. e. toward the free end of the stem, being the part intended to be embedded in the casting. This last mentioned part by the partial shearing process is therefore laterally offset slightly from the remaining portion of the stem which extends to the base.

As previously stated, the part of the stem between the partial shear and the free end of the stem is preferably deformed to provide a proper anchorage between the metal

of the casting and the portion of the stem which is to be embedded therein, and as stated above, this can be done in different ways as by indenting the offset portions as shown at 13 in Figs. 1 and 2, but preferably by giving the portion of the stem which is to be embedded in the cast metal a second partial shear as shown at 14, it being understood that this second partial shear 14 is not for the purpose of facilitating breakage, for the stem is intended to be broken at the partial shear 12, and the second partial shear is to provide shoulders on opposite sides of the stem for anchorage purposes. The provision of shoulders for anchorage purposes is useful for it is sometimes desirable, especially when certain castings are being made, that the more or less ragged ends of the chaplets at the face of the casting be riveted over to form a smooth surface and a seal against leakage. The abutting or engaging shoulders of the chaplet and metal of the casting produce an anvil effect which facilitates this riveting.

When the double partial shear is utilized, of course, two offsets are obtained. Both these offsets can be in the same direction, but preferably in opposite directions as shown in Figs. 3 and 4, in which event the free end of the stem is brought back into alignment with the body of the stem which is below the partial shear 13.

The partial shearing and indenting or the partial shear at the two points, as the case may be, are preferably performed in one operation, and in Figs. 5 and 6 I have shown dies suitable for this purpose. In these figures the wire from which the chaplets, such as shown in Figs. 1 and 3, or the chaplet stems such as shown in Figs. 2 and 4 are produced, is shown at 15. In Fig. 5 the die blocks or carriers 16 are provided with two sets of dies 17 and 18, the latter being offset from the dies 17 as illustrated, to produce the partial shear 12, and the dies 18 in this instance being provided with protuberances 19 to produce the indentations 13. These dies are utilized to produce the chaplets or chaplet stems illustrated in Figs. 1 and 2.

In Fig. 6 the die blocks 20 are shown as provided with three sets of dies 21, 22 and 23, the dies 21 and 23 being in line, and the dies 22 being offset an amount sufficient to

produce the desired lateral offset and to produce the two partial shears 12 and 14.

After the partial shearing and indenting as in Fig. 5, or the partial shearing at the two points, as in Fig. 6, a suitable length of the wire is cut off to form the chaplet or the chaplet stem depending upon the type of chaplet being made, it being understood that if all wire chaplets are formed, the wire 15 is cut in longer lengths than when the chaplets have bases such as shown in Figs. 2 and 4.

The portions of the stems which are beyond the partial shear for breakage purposes, and are adapted to be embedded in the cast metal, may in other ways be provided with abrupt shoulders for anchorage purposes, as by providing flat faces or depressions on the stems which extend sharply inward, as illustrated in Fig. 6, showing a chaplet stem 11^b having above the partial shear 12 deformations or depressions.

In this manner the wire is by an inexpensive method partially sheared, and at the same time is given anchorage deformations, the wire being sheared to an extent such that the two parts are very easily separable, the separation taking place without liability of bending, as has occurred with simply indented stems. In fact, with these sheared chaplets the protruding portions are almost inevitably broken off when the castings are tumbled or otherwise cleaned.

Having described my invention, I claim:

1. A core supporting chaplet having a stem with a portion laterally offset from the remainder of the stem by a partial shear.
2. A chaplet for supporting a core in a mold, said chaplet having a portion adapted to be embedded in the cast metal, which portion is partially sheared and laterally offset from another portion.
3. A chaplet for supporting a core in a mold, said chaplet having a portion adapted to be embedded in the cast metal, which portion is partially sheared from another portion, and is deformed so that there will be an interlock between the said portions and the metal cast around it.

In testimony whereof, I hereunto affix my signature.

SAMUEL H. GIBSON.