

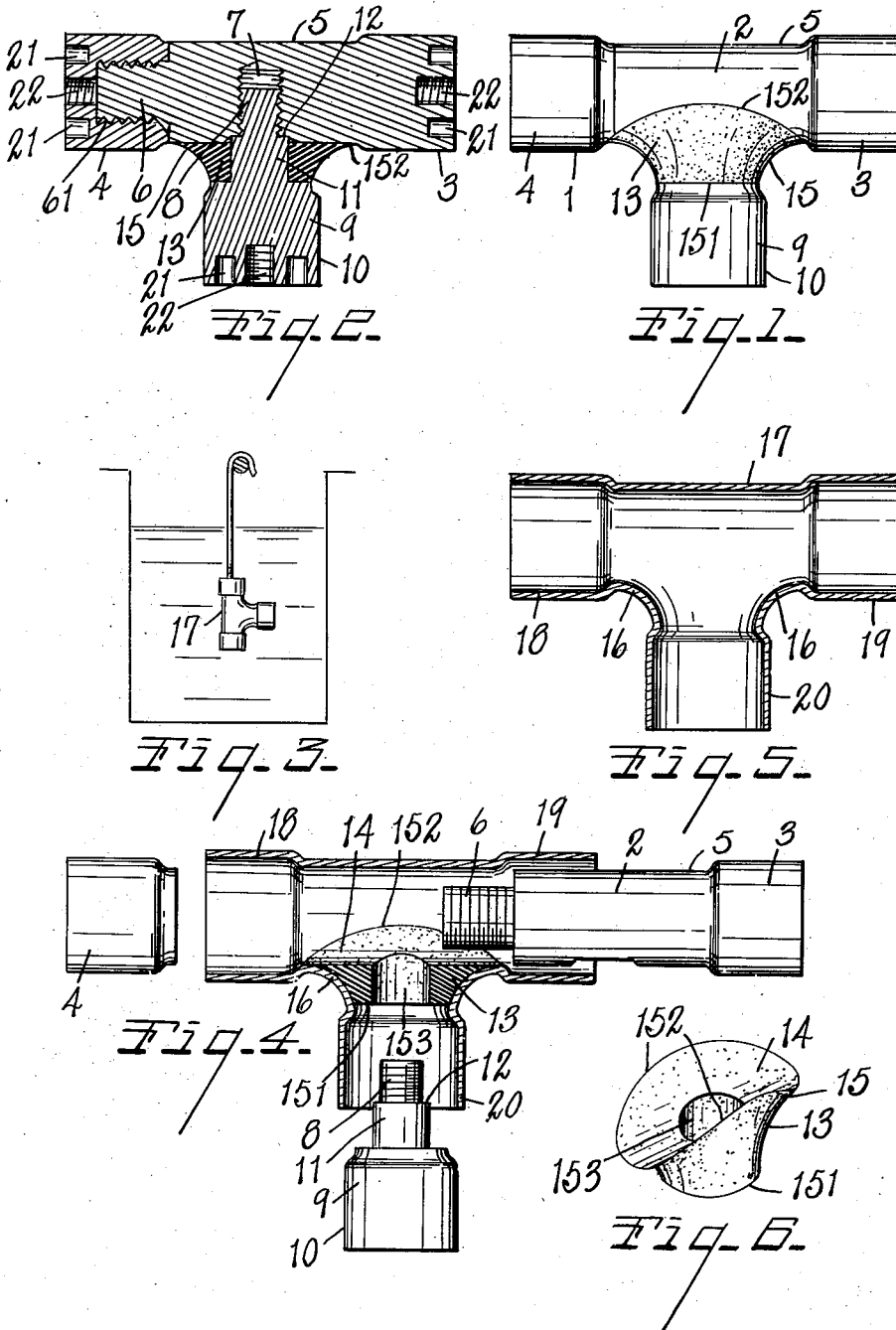
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CORE FOR ELECTRODEPOSITING PIPE COUPLINGS

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CORE FOR ELECTRODEPOSITING PIPE
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This invention relates to improvements in cores for electrodepositing pipe couplings.

The main objects of this invention are:

First, to provide a novel and improved core for producing objects of irregular outline by electrodeposition, more particularly pipe fittings or couplings.

Second, to provide a multiple-part core of the type described for use in electrodepositing hollow objects of irregular outline.

Third, to provide a core of the type described of multiple-part construction, which is readily assembled prior to use and dismantled after the process of electrodeposition is completed.

Fourth, to provide a core of the type described which is simple in construction, economically manufactured, and easy to use.

Fifth, to provide a core of the type described capable of use in producing pipe couplings and fittings which are uniformly smooth on the exterior and interior surfaces thereof.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined in the claims.

A structure embodying the features of the invention is illustrated in the accompanying drawing, wherein:

Fig. 1 is a view illustrating the core of the invention with the parts thereof in assembled position.

Fig. 2 is a view in longitudinal section more clearly illustrating the parts of the core of the invention in assembled relation.

Fig. 3 is a view illustrating the manner of forming the core of the invention in an electroplating bath, a completed or partially completed electrodeposited article in the form of a T-coupling being shown thereon.

Fig. 4 is a view partially in longitudinal section illustrating the manner of removing the core of the invention from a fitting produced thereon by electrodeposition.

Fig. 5 is a view in longitudinal section of the fitting produced by the core of the invention.

Fig. 6 is a perspective view of the shoulder forming insert constituting a part of the core of the present invention.

This invention relates to a core for producing hollow objects of irregular outline, being particularly intended for the production of pipe couplings or fittings of irregular shape, such as T-couplings; etc. The core consists of a plurality of parts readily assembled by a few simple manipulations and conveniently dismantled after the process of electrodeposition is completed,

The core illustrated is one adapted for use in producing a T-coupling and therefore has novel provision for forming the rounded shoulder between the stem and transverse member thereof, whereby the resultant electrodeposited coupling will be smooth on its exterior due to the uniformity of deposition of metal and similarly smooth on its interior due to the provision of a shoulder forming insert, the surface of which merges or blends with the other parts of the core in a novel manner.

In the drawing, the reference numeral 1 in general indicates the core of the present invention which consists of a two-part main or longitudinal member or section 2 having enlarged extremities 3, 4 for producing the female coupling ends or sockets of the resultant fitting. The core 2 has a reduced intermediate portion 5 integrally connected to the enlarged end 3 and provided with a further reduced screw threaded extremity or nipple 6 adapted to engage the threaded bore of the end portion 4 whereby the portion 4 may be removed at the termination of the electrodeposition.

The core 2 is transversely drilled and tapped, in the embodiment illustrated, radially at a central point as indicated by the reference numeral 7 to receive the screw threaded end 8 of the lateral arm or branch member or section generally designated 9. The said branch member 9 has an enlarged portion 10 for forming a female coupling end or socket on the fitting and a reduced neck portion 11 intermediate the said portion 10 and the threaded end 8. I provide a shoulder 12 between the threads 8 and the neck portion 11 intermediate the said portion 10 and the threaded end 8, which shoulder is adapted to engage the intermediate portion 5 of the member 2 whereby to properly position the members. The reduced neck provides an annular recess between the members and is adapted to receive the resilient fillet or shoulder forming insert 13, which is preferably rubber but may be made of any suitably deformable material.

This insert is illustrated in Fig. 6. It has flaring or shirt-like inner end portions with a concave elongated interior face 14 adapted for snug engagement with the reduced portion 5 adjacent the branch receiving bore therein. It is curved exteriorly at 15 from an annular shoulder 151 normally abutting the enlarged branch portion 10 to an annular feather edge 152 merging in operative position with the surface of the intermediate portion 5 of the main member of the core. A bore 153 in the insert receives the neck 11 to po-

sition the insert operatively, whereby to complete the shoulder 16 on a finished product 17 electrodeposited on the core, as illustrated in Fig. 5. The female coupling sockets referred to above are indicated by the reference numerals 18, 19 and 20.

In Fig. 4, I illustrate a finished fitting and the manner of removing the core from the same after the process of electrodeposition is completed. The section 9 is first removed from engagement with the section 2 by unscrewing or threading the former outwardly, suitable recesses 21 adapted to receive a spanner wrench being provided for this purpose. The end member 4 is thereafter removed by a similar operation, after which the rest of section 2 is withdrawn axially from the fitting as illustrated in Fig. 4. I provide threaded openings 22 in the various members of the core whereby the same may be suspended in an electroplating bath as illustrated in Fig. 3 and which may likewise be available of to withdraw the core members from the finished fitting.

As a final step, the shoulder forming insert 13 is removed from the fitting by any suitable means, its resilience permitting it to be readily deformed for this purpose.

Prior to placing the assembled core as illustrated in Fig. 1 in the electroplating bath, the same may be coated in whole or in part with a suitable substance to facilitate the depositing of the metal but it has been found that in couplings of the smaller sizes particularly, it is unnecessary even to coat the insert as the deposition will throw across the insert where the other parts are made of metal. If desired, certain parts can be coated, that is, the exposed ends, to prevent deposition of metal thereon. The core might be formed of material other than metal, that is, non-conducting metal and properly coated.

The core as illustrated and described is simple in construction and economical of production. It is readily manipulated in use and results in the production of superior fittings which are uniformly smooth both on their exterior and interior. The shoulder forming insert 13 merges with the surfaces of the reduced portion 5 and member 9 in such a manner that there is no perceptible joint or meeting line formed interiorly of the finished product and the various other parts are appropriately machined so that the joints therebetween do not result in the formation of ridges in the fitting. I desire to stress the fact that the surface of insert 13 merges for all practical purposes with the surfaces of the core so that the effect is the same as if the latter were of one-piece construction.

I have illustrated and described my improvements in an embodiment which is very practical. I have not attempted to illustrate or describe other embodiments or adaptations as it is believed this disclosure will enable those skilled in the art to embody or adapt my improvements as may be desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A core for use in electrodepositing a branched fitting comprising a pair of elements threadedly connected to form a main core member, said elements having enlarged end portions suitable for forming female coupling sockets on the electrodeposited fitting, a branch forming section threadedly engaging one of said first named elements and extending laterally thereof, said sec-

tion likewise having an enlarged end portion for forming a coupling socket on said fitting, said branch section being reduced to provide an annular recess between the same and the transverse member, and an annular rubber shoulder forming insert in said recess, said insert being externally curved to a feather edge whereby the surface thereof merges with the surfaces of said branch section and transverse member to form a rounded seamless shoulder connecting the same.

2. A core for use in electrodepositing a branched fitting comprising a main longitudinal member, said member having enlarged end portions suitable for forming female coupling sockets on the electrodeposited fitting, a branch forming section threadedly engaging said main member and extending laterally thereof, said branch section likewise having an enlarged end portion for forming a coupling socket on said fitting, said section being reduced to provide an annular recess between the same and the transverse member, and an annular resilient shoulder forming insert in said recess, said insert being externally curved whereby the surface thereof merges with the surfaces of said branch section and transverse member to form a rounded seamless shoulder connecting the same.

3. A core for forming branched fittings comprising a plurality of sections threadedly connected to provide longitudinal and branch members at an angle to one another, said sections being adapted to be separated by unscrewing the same from assembled relation, said branch member being reduced adjacent its connection with the longitudinal member to provide an annular recess therebetween, and a rubber shoulder forming insert surrounding said branch member in said recess, said insert having an external curved surface and being provided with a feather edge shaped to merge with the surface of said longitudinal member whereby the walls of the branch and longitudinal members will be merged in the resultant fitting electrodeposited on the core.

4. A core for forming branched fittings comprising a plurality of sections removably connected to provide longitudinal and branch members at an angle to one another, and a rubber shoulder forming insert surrounding said branch member, said insert having an external curved surface and being provided with a feather edge shaped to merge with the surface of said longitudinal member whereby the walls of the branch and longitudinal members will be merged in the resultant fitting electrodeposited on the core.

5. A core for forming branched fittings by electrodeposition comprising a plurality of sections threadedly connected to provide main and lateral members at an angle to one another, said sections being adapted to be separated by unscrewing the same from assembled relation, and a resilient shoulder forming insert surrounding said lateral member, said insert having a curved external surface and being provided with a feather edge merging with the surface of at least one of said members.

6. A core for use in forming branch fittings and the like by electrodeposition, comprising a main core member of cylindrical cross section, a branch core member of cylindrical cross section detachably secured to the main core member at an angle thereto, said branch core member having a reduced inner portion, and an insert of flexible material arranged on the reduced end of said branch core member with its surface constituting a continuation of a surface portion of

the branch core member and provided with a flaring skirt portion fitting the side of the main core member at the base of the branch core member and terminating in a feather edge whereby the walls of the main and branch core members will be merged in the resultant element electrodeposited on the core.

5 7. A core for use in forming branch fittings and the like by electrodeposition, comprising a
10 main core member, a branch core member detachably secured to the main core member at an angle thereto, said branch core member having a reduced inner portion, and an insert of flexible
15 material arranged on the reduced end of said branch core member with its surface constituting a continuation of a surface portion of the branch core member and provided with a flaring skirt portion fitting the side of the main core member

at the base of the branch core member and terminating in a feather edge whereby the walls of the main and branch core members will be merged in the resultant element electrodeposited on the core.

5 8. A core for use in forming branch fittings and the like by electrodeposition, comprising a main core member, a branch core member detachably secured to the main core member at an angle thereto, and an insert of flexible material arranged on the said branch core member and
10 provided with a flaring skirt portion fitting the side of the main core member at the base of the branch core member and terminating in a feather edge whereby the walls of the main and branch
15 core members will be merged in the resultant element electrodeposited on the core.

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