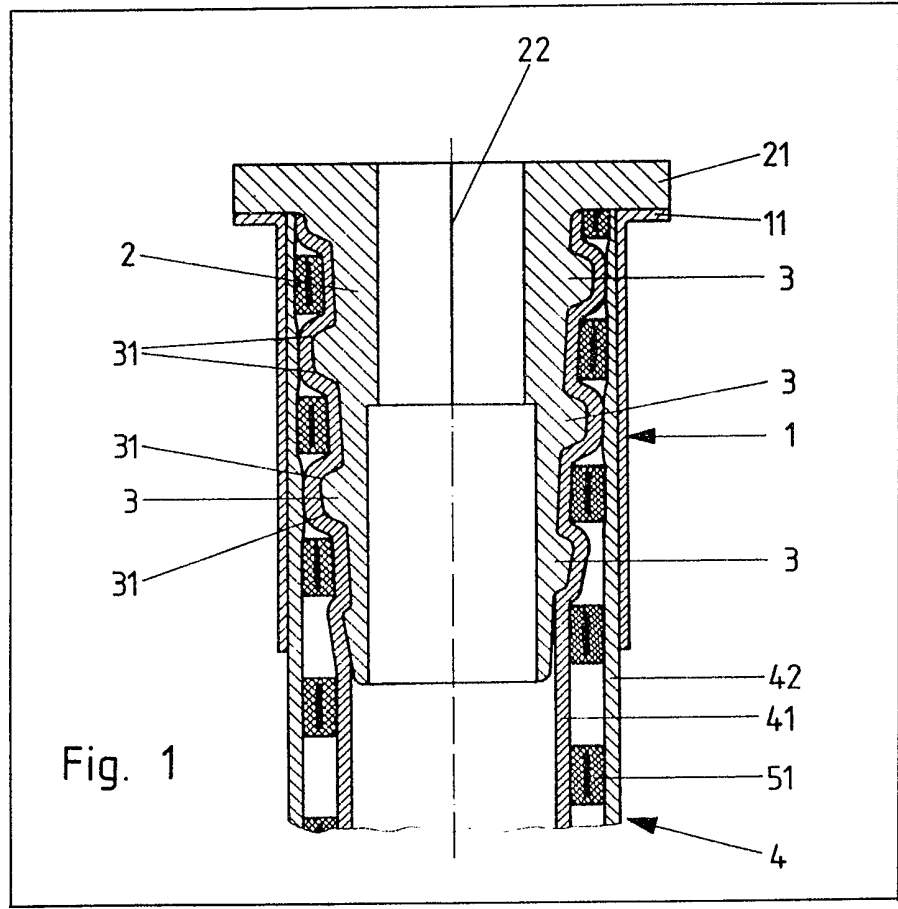


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(54) Flexible tubing connector

(57) A connector for flexible plastic tubing of the kind having an embedded or superimposed coil reinforcement, comprises a screw-threaded nozzle (2), with the pitch of

the thread corresponding to that of coil (51) screwed in at the flexible tubing end. The screw thread turns engage in the coil interspace, tightly forcing the flexible tubing from inside against an outer reinforcement sleeve (1) and joining the flexible tubing positively to the connector.

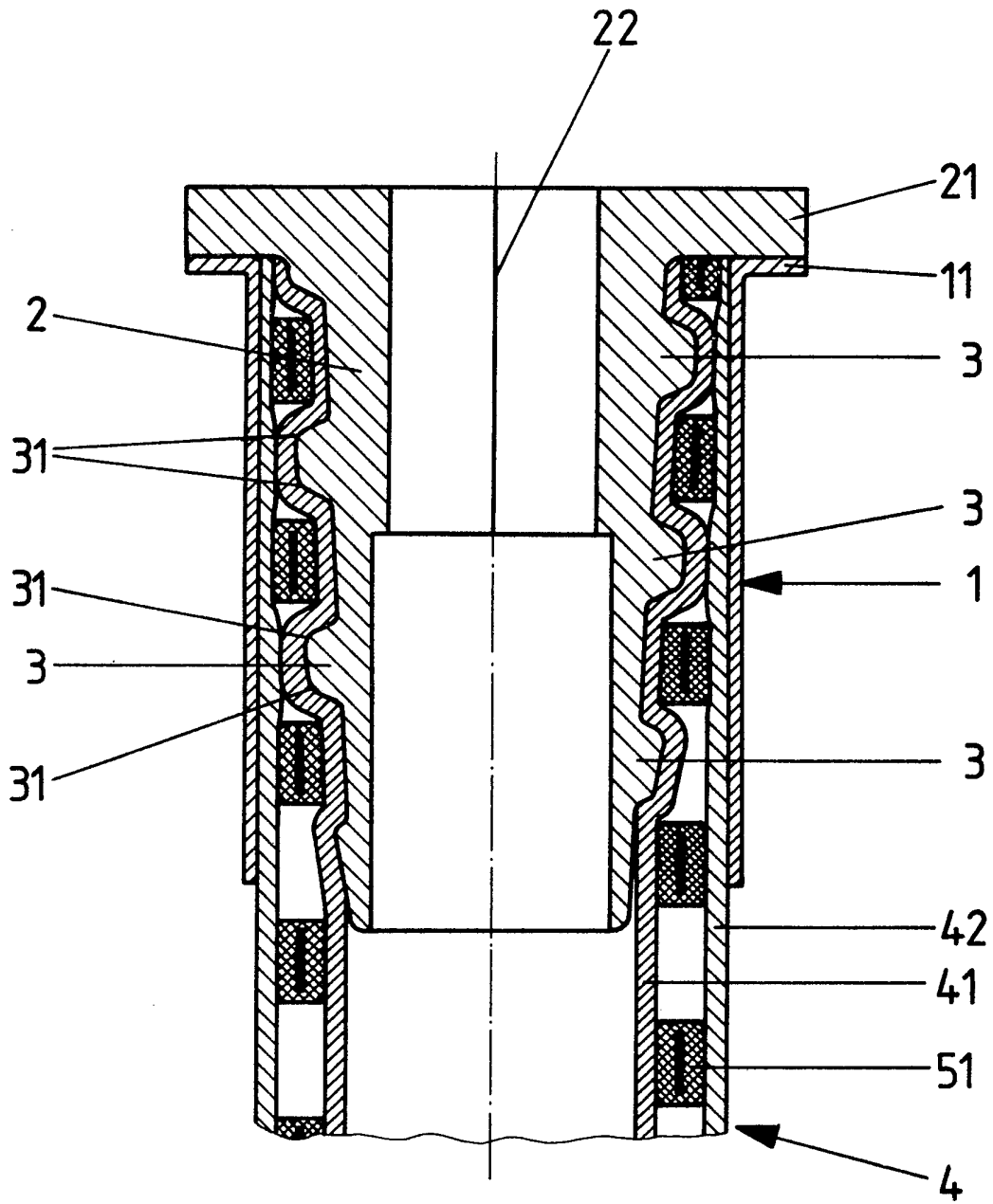


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The drawings originally filed were informal and the print here reproduced is taken from a later filed formal copy.

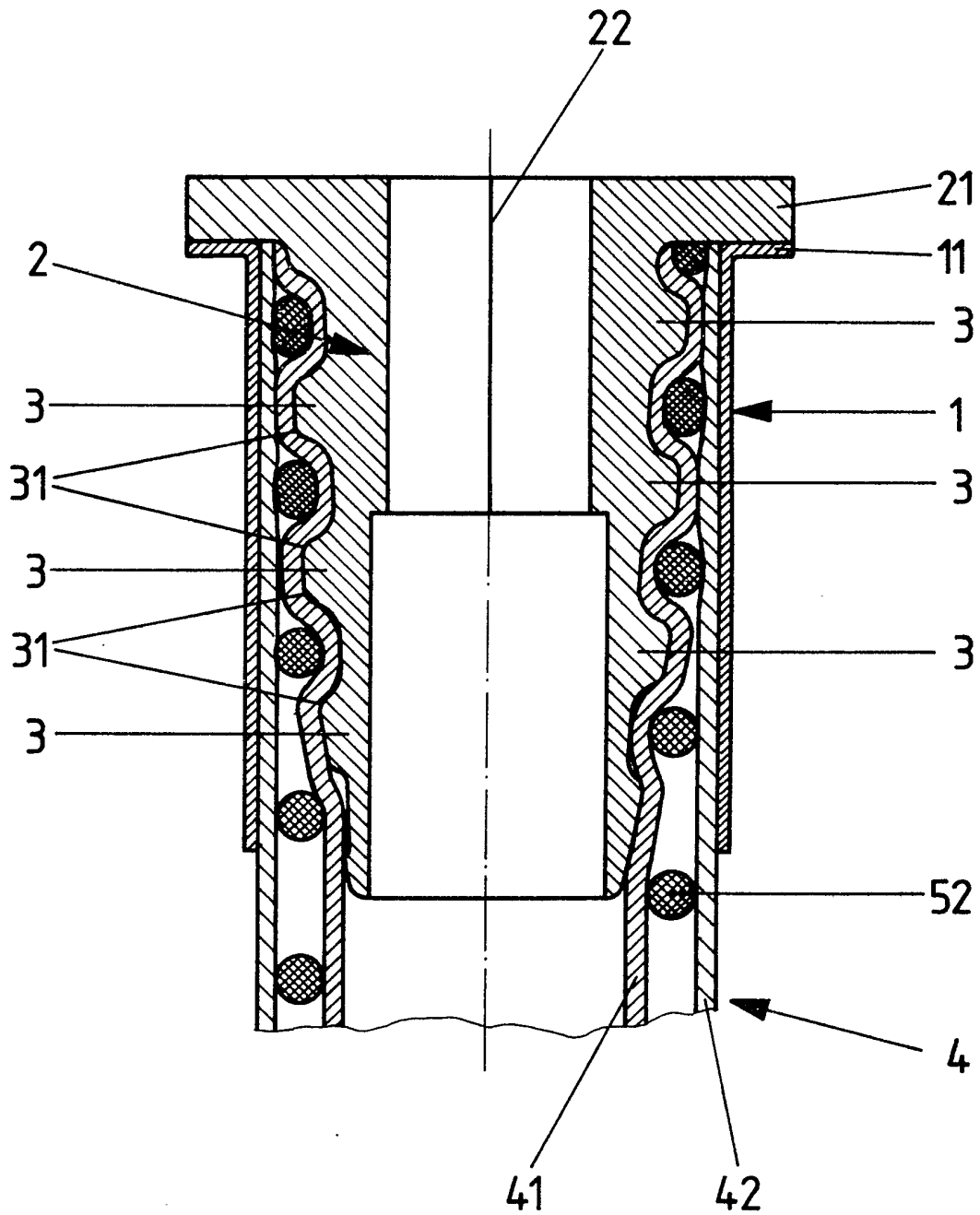
1/2

Fig. 1



2/2

Fig. 2



SPECIFICATION

Flexible tubing connector

The invention concerns a connector with reinforcement sleeve for flexible plastic tubing with embedded or superimposed coil. Connectors of this type are already known (DE—GM 76 00 734). Here for positive, leakproof fastening of flexible tubing, particularly flexible shower tubing, a connector is used on sanitary pipe fittings which consists, in addition to the reinforcement sleeve, of a clamp sleeve and a specially shaped sealing collar fitted over the end face of the flexible tubing end. For secure, leakproof connection of the connector to the flexible tubing the clamp sleeve is expanded with a special expansion device.

The purpose of the invention is to provide a simply manufactured connector for flexible tubing, particularly flexible shower tubing where no special expansion device is necessary for leakproof connection between flexible tubing and connector.

According to the present invention there is provided a connector for flexible plastic tubing of the kind having an embedded or superimposed strengthening coil, the connector comprising a screw-in nozzle with a screw thread having a pitch corresponding to the pitch of the coil for screwing onto the flexible tubing end in combination with a reinforcement sleeve for reinforcing the tubing end against the nozzle.

Preferably the screw thread of the nozzle is conical in shape, and preferably also the screw thread is provided with a profile which corresponds approximately to the coil interspace, the profile edges being rounded.

The thread can with advantage have a slight taper so that increasing sealing pressure is exerted as it is screwed progressively further in. The profile of the screw thread can also with advantage be shaped such that it constantly widens or increases in cross section from the beginning of the thread.

Ideally a shoulder is formed on the outside of the screw nozzle which on the one hand limits the extent of screw-in and on the other hand forms location for a union nut. To achieve satisfactory transition and occlusion between screw nozzle and reinforcement sleeve the reinforcement sleeve can with advantage be provided with a flange whose outside diameter corresponds to the shoulder.

The drawings show examples of the invention and are described in detail below.

Figure 1 shows a longitudinal section through a connector on the end of flexible tubing with flat strip coil, and

Figure 2 shows a longitudinal section through a flexible tubing connector on one end of flexible tubing with round cord coil.

For the sake of simplicity, with the design examples shown in the drawings identical or corresponding elements have been given the same numbers.

In the case of the design example shown in Figure 1 the end of a flexible tube 4 which consists

65 of inner tubing 41 and outer tubing 42, whereby a coil 51 of flat strip has been embedded between inner and outer tubing, is located in a reinforcement sleeve 1. The reinforcement sleeve 1 has a flange 11 which is flush with the flexible tubing end.

70 For leakproof connection a screw nozzle 2 is screwed into flexible tubing 4 with a screw thread 3, the pitch of screw thread 3 corresponding to the pitch of coil 51. Screw thread 3 tapers slightly so that initially it can be screwed in easily, gradual transition taking place from the unstressed flexible tubing to the compressed end section in reinforcement sleeve 1. To prevent damaging the inner tubing 41 during the process of screwing in screw nozzle 2, screw thread 3 is trapezoidal in shape, the profile edges 31 of the screw thread being slightly rounded.

85 Fitment of the connector can be carried out as follows: first of all one or two union nuts are fitted over flexible tubing 4 and afterwards reinforcement sleeve 2 is fitted over the flexible tubing end so that flange 11 is flush with the flexible tubing end. Now screw nozzle 2 is inserted in inner tubing 41 and is screwed into the flexible tubing using a spanner with the aid of flats 22. In the process the inner tubing is forced by the screw thread profile into the coil interspace and as a result forms a positive joint with the flexible tubing. Screw nozzle 2 is screwed in until its 95 shoulder 21 contacts flange 11 of reinforcement sleeve 1, whereby as a result of the taper of the thread, particularly in the end section, the flexible tubing is tightly compressed between screw nozzle 2 and reinforcement sleeve 1. In addition flange 11 and shoulder 21 provide location for the union nut fitted with which the connector can be joined to a sanitary pipe fitting, e.g. hand held shower.

100 The design example shown in Figure 2 differs from that described above essentially by virtue of the fact that, instead of flat strip coil, a coil 52 in the form of a round cord is embedded in the hose. Accordingly the screw thread of the nozzle is rounded off to a more pronounced extent whereby 110 the screw thread profile widens continuously towards shoulder 21, this permitting increased gripping effect on the part of inner tubing 41.

CLAIMS

1. A connector for flexible plastic tubing of the kind having an embedded or superimposed strengthening coil, the connector comprising a screw-in nozzle with a screw thread having a pitch corresponding to the pitch of the coil for screwing onto the flexible tubing end in combination with a reinforcement sleeve for reinforcing the tubing end against the nozzle.

2. A connector in accordance with claim 1, wherein the screw thread of the nozzle is conical in shape.

3. A connector in accordance with claim 1 or claim 2, wherein the screw thread is provided with a profile which corresponds approximately to the coil interspace, the profile edges being rounded.

4. A connector in accordance with any preceding claim, wherein the profile of the screw thread is of a shape such that it widens continuously from the beginning of the thread.
- 5 5. A connector in accordance with any of claims 1 to 4, wherein a shoulder is formed on the nozzle for retention of a union nut and/or to limit the extent of screw-in.
- 10 6. A connector in accordance with claim 5, wherein for the purpose of contact and axial location on the nozzle the reinforcement sleeve has a flange whose outside diameter corresponds to that of the shoulder.
- 15 7. A connector comprising a nozzle and sleeve substantially as hereinbefore described with reference to the accompanying drawings.
8. A shower hose having a connector according to any preceding claim.
- 20 9. A shower hose as claimed in claim 8 and substantially as hereinbefore described with reference to Figure 1 or Figure 2 of the accompanying drawings.