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P. WITTE

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THREADED CONTAINER SPOUT

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Fig. 1.

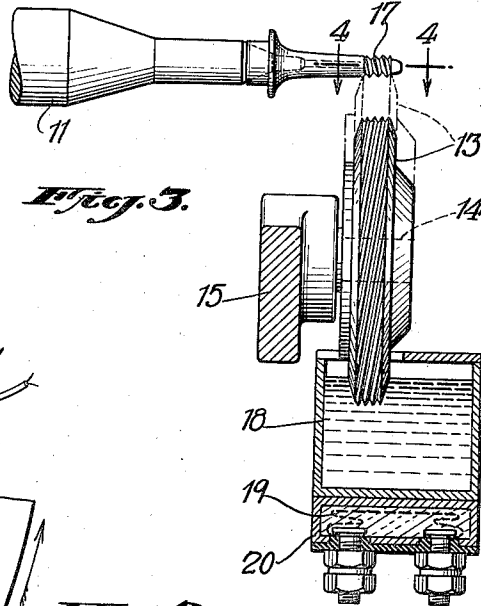
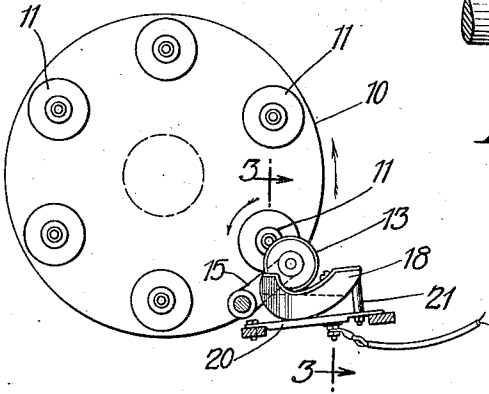


Fig. 2.

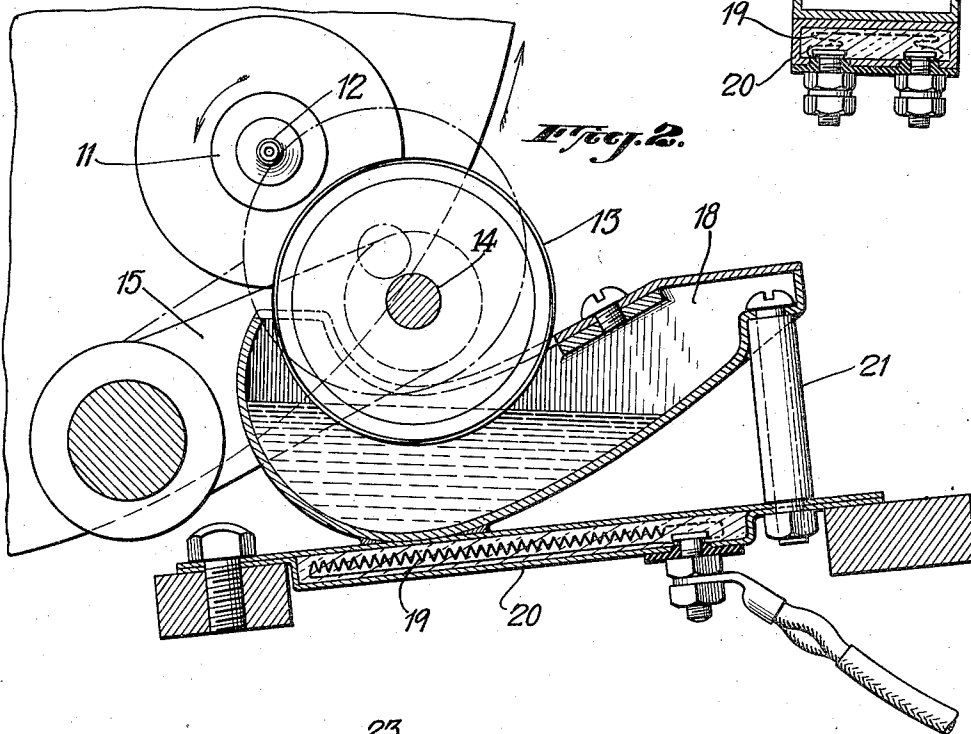
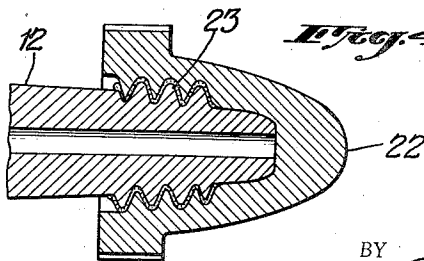


Fig. 4.



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THREADED CONTAINER SPOUT

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3 Claims. (Cl. 221-5)

My invention relates to a spout for containers such as used for small oil cans or similar liquid containers or the necks of containers or tubes for pastes or semi-solids. Such spouts are commonly provided with screwthreads near their tips onto which small internally threaded caps are secured prior to the soldering of the spouts to the containers. In handling the spouts the caps tend to become loose and unscrew from the tips unless they are screwed tightly so as to jam the threads, in which event it may be difficult to remove them after the spout has been soldered in position.

My present invention obviates this and provides means whereby the caps may be mounted onto the tips of the spouts or the necks of containers and held in position against removal or loosening in handling or treatment, but which permits the caps to be readily unscrewed from the spouts by a twist of the fingers. More specifically, the invention relates to the provision of a soft cementing layer between the threaded surface of the spout tip and the internally threaded surface of the cap so that it is held from removal by the viscosity of the cementitious material, but may be readily unscrewed by applying a force sufficient to overcome the relatively slight viscosity of the cementing material.

The various features of the invention are illustrated by way of example in the accompanying drawing, in which—

Fig. 1 shows diagrammatically a mechanism whereby spindles carrying spouts may be brought successively into operative position for rolling screwthreads onto their tip portions.

Fig. 2 is a vertical section at right angles to the axis of the spindle and spout and showing the mechanism for rolling threads onto the tip of the spout.

Fig. 3 is a vertical section in planes at right angles to that of Fig. 2, and taken on the line 3-3 of Fig. 1.

Fig. 4 is a longitudinal section through the tip portion of a spout and a cap as, for example, on line 4-4 of Fig. 3.

In my invention the spout of a container is rotated on its longitudinal axis, a die wheel having thread cutting grooves is forced against the peripheral surface of the spout at the tip to form screwthreads therein and, at the same time, or in the same operation, a viscous cementing material is coated onto the screwthreads as they are formed. This viscous material may be, for example, a wax such as beeswax, or a composition of waxes such as beeswax or other waxy or

viscous materials, which do not set to a solid and which adhere to the metal or material of which the spout and its cap are formed. Therefore, when a cap is mounted onto the screwthreads of the spout, the cementing material not only fills the spaces between the screwthreads of the cap and spout, but forms a thick, viscous or semi-solid layer between them which seals the spaces between the threads and which yields only when a considerable twisting pressure is applied.

Should the cap become partially untwisted, the cementing material still holds it against further movement so that the cap does not become loose until it is entirely unscrewed. Thus, it does not become loose and fall off of the spout by being jostled or rubbed against other spouts or caps inasmuch as a shock that partly turns the cap does not appreciably loosen it.

The cementing or semi-solid material may be applied to the threads of the spout as the latter are formed or immediately thereafter. Preferably, it is applied by being coated onto the peripheral surface of the rolling die so that it adheres to the spout surface and is distributed thereover during the rolling of the threads. The cementing material may be applied to the peripheral surface of the die wheel in any suitable manner as, for example, by having the latter dip into a bath of the cementing material which is kept molten by any suitable heating means. As the die wheel rotates it continuously dips up fresh quantities of the liquid cementing material, carries it to the threads being formed and distributes it thereon as the thread rolling is completed, whereupon the material will solidify on the threads.

Referring more particularly to the accompanying drawing the invention is illustrated as applied to a thread rolling machine having a rotatable wheel or disc 10 carrying a number of spout supporting and rotating spindles 11, each of which carries a spout 12 and is brought successively to a position adjacent a thread rolling die 13. Each spout is brought successively to an operative position relative to the thread rolling die 13 and held there for a limited period of time.

The thread rolling die 13 is freely rotatable on a trunnion 14 carried on the end of a swinging lever 15 which may be swung manually or by any suitable mechanism to force the grooved peripheral edge of the die wheel 13 against the periphery of the spout 12 near its tip to cut screwthreads 17 therein. The mechanism for swinging the die wheel against the peripheral tip of the spout

is known and is, therefore, not illustrated in detail.

Before the periphery of the die wheel 13 is brought against the tip of the spout it is coated with cementing material to be applied to the threaded part of the spout. For this purpose a bath 18 of molten material is provided in such position that the periphery of the die wheel 13 dips thereinto when it is in its lowermost position as shown in full lines in Fig. 2. The die wheel is thus coated with the molten material and when it is later pressed against the tip 12 it is rotated by the latter, spreading the waxy cementitious material onto the newly cut threads as soon as they are formed. To provide a thinner and easily handled coating for thick, semi-solid or solid cementing materials, an electric heater 19 is provided immediately below the bath 18 so as to bring the latter to any desired temperature. The bath 18 and heater 19 may be of any suitable type but preferably the bath is of shallow, curved form so as to bring the mass of molten material into the greatest depth immediately below the die wheel 13. The electric heater 19 may be positioned at any desired place relative to the molten material but is preferably supported in a lower bracket 20 by means of studs 21.

The rolling of the threads by the coated die wheel leaves a thin film of the cementing material on the newly cut threads so that when a cap 22 is threaded thereon the space between the cap threads and the spout threads, as shown at 23 in Fig. 4, is filled with the cementing material. Thus the cap can only be removed against the continuously acting and constant friction cor-

responding to the viscosity of the cementing material so that a jar causing a slight turning of the cap in an unscrewing direction does not loosen it. However, the viscosity of the cementing material does not cause any appreciable resistance to the normal unscrewing action of the fingers in removing the cap. The cementing material also forms an air tight seal between the threads of the cap and spout.

It will be apparent that the cementing material may be applied in other ways than that specifically described above as, for example, either to the threads of the neck or spout or of the cap, after they have been formed.

What I claim is:

1. A container spout having external threads near its tip, a closing cap threaded onto said threaded tip and a filling of permanently viscous non-setting material between said cap and said threads of said tip to seal said spout and provide a limited resistance to removal of said cap.

2. A container spout having external threads near its tip, a cap threaded onto said tip, a filling of non-setting cementitious material comprising beeswax between the threads of said tip and said cap to seal said cap on said tip and provide a limited resistance to removal of said cap.

3. A container spout having external threads near its tip, a closing cap threaded onto said threaded tip, and a coating of yieldable non-setting solid material between the threads of said tip and said cap, said material having a melting point above normal atmospheric temperatures.

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