

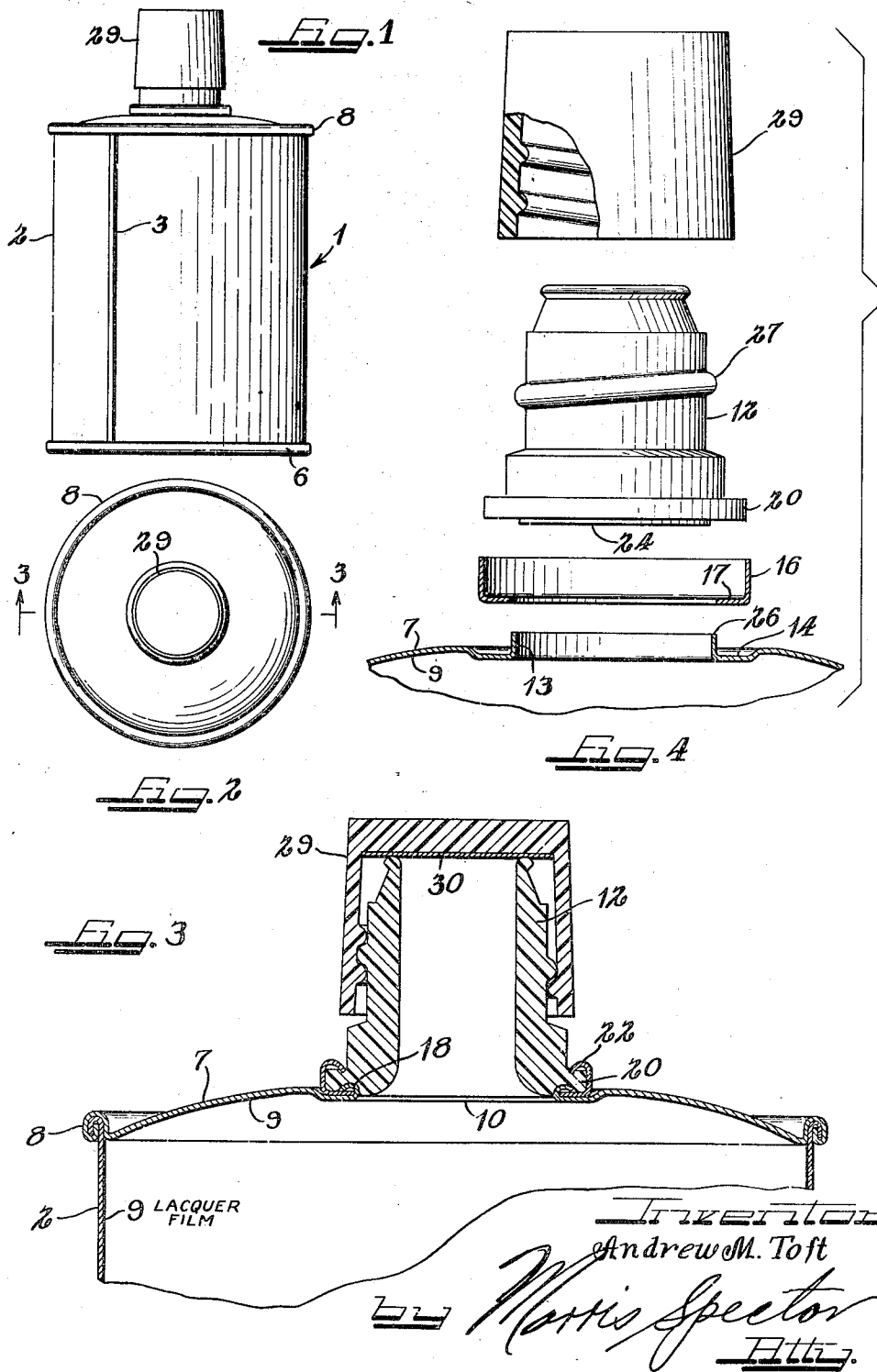
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DISPENSING CAN HAVING A RESILIENT SPOUT

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DISPENSING CAN HAVING A RESILIENT SPOUT

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This invention relates to metal cans of the type provided with a pour-out spout or the like and wherein the interior of the can surface is covered with a protective film to prevent reaction of the product within the can with the metal of the can.

In the can making art it is common practice to make a can of metal that has been previously coated with a protective film such as, for instance, lacquer, to prevent chemical reaction of the canned product with the metal of the can. In the fabrication of such a can it is important that the metal drawing operation be so performed as to assure non-breakage of the protective film of lacquer or the like. It is also important that the construction of the can and the manner of fabricating it be such as not to expose raw metal edges to the product within the can.

There are on the market metal cans that are provided with a pour-out spout that is connected to the can body. In the case of a separate spout that is made of a plastic material that is inert with respect to the product, it is important that the construction be such that the product shall not under any reasonable circumstances come in contact with the raw edge of the metal of the can, and it is also important that the spout be so constructed and mounted on the can cap as to provide a liquid-tight and preferably also an air-tight seal with the metal of the can, and without fracturing of the protective film on the can metal.

It is one of the objects of the present invention to provide a metal can construction that utilizes a separate spout or pour-out nipple that is constructed of an inert, resilient plastic and is so mounted in the cap as to require such a small amount of drawing of the metal that the lacquer coating will certainly not be fractured and yet the nipple will be securely and otherwise properly held in place.

It is a further object of the present invention to provide means for mounting a plastic nipple onto a metal can cap in such a manner that the metal forms a liquid-tight, air-tight seal around the nipple and holds the nipple securely against longitudinal movement relative to the can.

It is a still further object of the present invention to provide a metal can with an insert nipple forming a pour-out spout wherein the insert nipple is screw threaded to receive a screw threaded closure cap, and wherein the nipple is firmly held to the can in a non-rotatable manner so that when closure caps are threaded onto the nipples on a moving assembly line of cans the nipples will not rotate with the closure and therefore the closure will thread onto the nipple.

The attainment of the above and further objects of the present invention will be apparent from the following specification taken in conjunction with the accompanying drawing forming a part thereof.

In the drawing:

Fig. 1 is a side view of a can embodying the present invention;

Fig. 2 is a plan view thereof;

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Fig. 3 is an enlarged sectional view, taken along the line 3—3 of Fig. 2; and

Fig. 4 is an enlarged exploded view of the parts of the can illustrated in Fig. 3.

Reference may now be had more particularly to the drawing wherein like reference numerals designate like parts throughout.

The can of Fig. 1 comprises a cylinder 2 of the usual construction which may be of sheet metal formed into a cylindrical shape and the longitudinal edges sealed together at 3 in a conventional manner. The bottom 6 of the can is of the usual disk construction sealed to the cylinder 2 in any usual manner as, for instance, by a double seam. A top closure wall 7 in the form of a usual metal disk is joined to the body 2 in a usual manner as, for instance, by a double seam 8. The three parts of the can 1 thus far described are made of the usual metal, which may be tin plate, black plate, aluminum, or the like, each of the parts being, before fabrication of the can, coated with a protective film 9 of lacquer or other plastic material which is inert with the product that is later to be placed in the can. The top 7 has a central dispensing opening 10 through which the product in the can may be poured as through a spout or nozzle 12 that is secured to the top 7 in a manner to be presently described.

The top 7 is die formed by bending the metal around the opening 10 to form a neck 13 and a flat annular seat 14. The bending of the metal is such that the protective film 9 is not fractured. A metal retainer ring 16 is then slipped over the neck 13. This ring includes an internal annular flange 17 that rests on the seat 14. After the retainer ring has been positioned around the neck 13, the neck is hemmed at 18 to overlie the flange 17 and thus lock the retainer ring 16 in position on the cover 7. The spout or nozzle 12 is then positioned within the retainer ring. This spout is formed of an inert material, preferably plastic, such as, for instance, polyethylene. The spout has a circular outwardly extending flange 20 that fits snugly within the retainer ring and is of a height substantially less than the height of the retainer ring. Thereafter, the top of the retainer ring is curled inwardly and downwardly, as indicated at 22, so that the edge of the retainer ring bears against the top of the flange 20 and firmly presses it downwardly. The bottom of the flange 20 at this time is thus pressed firmly against the hem 18 around the full 360° of the opening 10 and, because the material of the nozzle is resilient or yielding, it deforms to seat around the entire periphery of the hem and exert a pressure contact against the hem 18. To increase the area of contact between the bottom of the spout or nozzle and the hem 18, the bottom of the spout may have a portion 24 thereof that projects a small distance below the flange 20 and is of an outside diameter slightly greater than the inside diameter of the opening 10 defined by the hem 18. As a result, when the curl 22 presses the flange 20 of the spout toward the can top 7, it forces the projecting portion 24 into the opening 10 formed by the hem 18. The outer periphery of the portion 24 is thus pressed snugly against the hem along the entire outer periphery of the projecting portion 24. There is thus provided a liquid-tight, air-tight seal along the area of contact of the spout with the hem 18 around the periphery of the opening 10. This prevents the product of the can from ever coming into contact with the raw edge 26 at the end of the hem 18. The curl 22 presses into the material at the top of the flange 20 and forms an air-tight seal against the entrance of foreign materials into the joint between the spout or closure and the can. It also serves to hold the nozzle 12 firmly against turning with respect to the can.

The outside of the spout or nozzle has a helical thread

27 formed thereon on which is threaded a closure cap 29 which may also be made of plastic and which contains the usual sealing disk 30 that seals against the top of the nozzle 12.

After filling of the cans it is usual to move them on a conveyor to a position where the caps 29 are automatically screwed over the spouts 12 of a moving row of cans. When this is being done, it is important that the spout shall be non-rotatable with the can. This is accomplished by reason of the firm grip on the flange of the spout as heretofore described.

From the above description it is apparent that the spout or nozzle is firmly held in place, cannot possibly be pushed into the can, and the amount of deforming to which the metal of the top 7 is subjected in order to mount the spout or nozzle in place is so small that the protective film 9 of plastic is not ruptured and therefore product protection is retained.

In compliance with the requirements of the patent statutes I have here shown and described a preferred embodiment of my invention. It is, however, to be understood that the invention is not limited to the precise construction here shown, the same being merely illustrative of the principles of the invention. What I consider new and desire to secure by Letters Patent is:

What is claimed is:

1. A dispensing can of metal, said can having a closure wall in which is formed a dispensing opening, the inner surface of said can having a protective film thereon which inhibits chemical action between the can and the contents thereof, a metal retainer ring having an internal flange bearing against said closure wall on the outside of the can and around said dispensing opening, the metal of the can around said dispensing opening being hemmed outwardly of the can over the edge of said internal flange to secure the ring in place and with the protective film coated surface at said hem extending to a position facing outwardly of the can, and a spout of a resilient, inert, plastic material having a flange which is on the film of the film covered outwardly facing portion of the hem and is on the internal flange of the ring and is surrounded by said retainer ring, the end of said retainer ring remote from the hem being curled radially inwardly into pressure engagement with the said spout flange and com-

pressing said spout flange into sealing engagement with the hemmed portion of said can.

2. A dispensing can having a closure wall in which is formed a dispensing opening, a retainer ring having an internal flange bearing against said closure wall around said dispensing opening on the outside of the can, the closure wall around said dispensing opening being hemmed outwardly of the can around and over the edge of said internal flange to secure the ring in place, and a spout of a resilient material which is within said retainer ring, said spout having a shoulder formed thereon on the outside of the can, said shoulder bearing on and covering a loop which surrounds the opening on that surface of the hemmed material which is a continuation of the inner surface of the can closure wall and said shoulder closing off communication between the interior of the can and that edge of the hemmed closure wall that surrounds the opening at the hem, the end of said retainer ring remote from the can hem being curled radially inwardly into engagement with the said shoulder and compressing said spout into sealing relationship with said can.

3. A dispensing can comprising a can body having a wall in which is formed a dispensing opening, the inner surface of said can body having a protective film thereon which inhibits chemical action between the can body and the contents thereof, a spout made of a resilient, inert yielding material and having an external flange, and means for securing said spout to said can body over said dispensing opening comprising a retainer ring secured to the outside of said can wall around said dispensing opening and surrounding said spout flange, and said retainer ring being curled inwardly and over said spout flange, and forcing said spout toward and into sealing relation with said can body wall, said spout flange extending to a position overlying the film through an angle of 360 degrees around the opening and by its yielding action maintaining sealing engagement with the protective film throughout an angle of 360 degrees around the opening.

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