COMMISSIONER'S DECISION

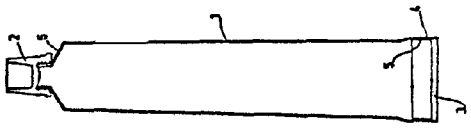
OBVIOUSNESS: Flexible metal tubes for toothpaste

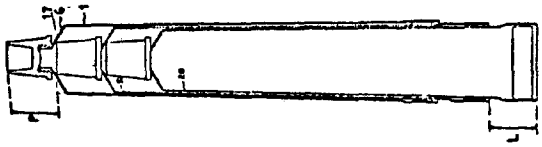
Tapered tubes which nest for compact storage or handling prior to filling have been known for forty years. Use of a sealant on the open end has also been used since 1936. The applicant expanded the end portion of the tube to facilitate nesting of tubes coated with sealants. Though the invention was simple, evidence of commercial success and the long delay in implementing the improvement is such an active field were factors in holding that the improvement made was not obvious.

Final Action: Reversed.

This decision deals with a request for review by the Commissioner of Patents of the Examiner's Final Action dated September 23, 1974, on application 076,400 (Class 222-92). The application was filed on August 24, 1971, in the name of Thomas D. Brownbill, and is entitled "Flexible Tubes". The Patent Appeal Board conducted a Hearing on July 7, 1976, at which Mr. I. Mackinson represented the applicant.

This invention relates to flexible metal tubes used to package such semi-fluid materials as tooth paste, glue and shaving cream. The applicant has developed a cylindrical tube particularly suitable for shipping and storage prior to filling. Figures 1 and 2 below illustrate the alleged invention.





Each tube is filled through the lower open end, which is then closed by folding and crimping. Inside the open end is a layer of sealant (4) which prevents leakage when the opening is closed. The inventor has made his

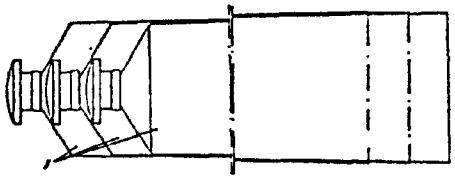
tubes conical, so that they may be nested one within another. This gives rigidity to a package of tubes, and they may be shipped in that form without deformation and damage. It will be noted that there is a flare at the bottom of each tube where the sealant is located. This means that when the tubes are stacked the sealant does not touch the tube next to it. The presence of the flare means that each tube nests deeper down into the preceding tube, so that the stack is smaller and considerably more rigid than it would be otherwise. If there were no flare the sealant layer would act to prevent the desired nesting of one tube into another.

In the Final Action the examiner rejected the application as lacking patentable subject matter in view of the following references:

Canadian Patent		
695,976	Oct. 13, 1965	Wanderer
U.S. Patent		
2,028,112	Jan. 14, 1936	Westin
3,325,048	June 13, 1967	Edwards
British Patent		
898,387	June 6, 1962	Duffau

The Duffau patent, which discloses flexible metal tubes used for toothpaste, is directed to a tapered shape which enables nesting of the tubes for compact storage or handling before filling.

Figure 3 shown below illustrates the Duffau arrangement.



Westin shows collapsible tubes used for pastes, creams, glue, paint etc. He seals the end of the tubes after filling to prevent leakage of the contents. He uses a layer of cement put at the filling end of the tube to form an hermitic seal. Reference numeral 4 in figure 1 below represents the layer of cementing material.

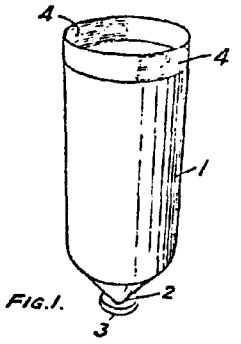
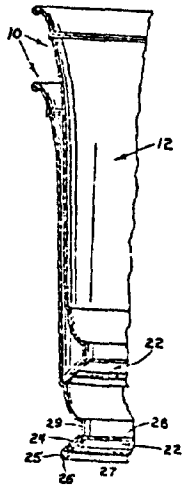
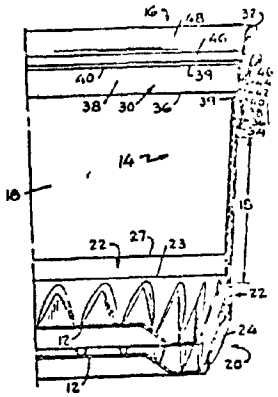


FIG. 1.

The Edwards patent describes a nesting arrangement for storing thin walled plastic containers. Each container has a stacking ring or shoulder at the lower portion of tapering sidewalls. This shoulder serves as a stop for each adjacent stacked container, thereby enabling easy separation of the stacked containers. They are shown in Figure 3 below:



Similarly the Wanderer citation relates to thin-walled plastic containers in which a shoulder is located at the upper portion of the tapered walls. This is illustrated in Figure 2 shown below:



In the Final Action the examiner stated (in part):

> The problem which the alleged invention attempts to solve is clearly set forth on page 2, lines 10 to 13 of the disclosure: The known sealant layer "prevents one tube from entering the end opening of an adjacent tube to the extent necessary to enable the walls to be in surface contact".
>
> The alleged improvement, over the prior art, to which the specification is directed to solve the above-mentioned problem, lies merely in having an expanded section at the larger, open end of the known tube whose sidewall is conical and which is known to have a sealant layer at the open end, so as to allow stacking of the known sealant layered tubes (lines 6 to 27 on page 3 of the specification).
>
> Applicant's alleged invention, then, as set out by applicant in the specification, lies merely in having an expanded portion at the end of the known tube. The sealant layer, in the known tube, prevents close stacking of the known conical tubes, and to solve this problem applicant merely expands the tube end containing the sealant layer.
>
> It is maintained that to have an expanded portion, as defined by claims 1, 4 and 5, is a most obvious solution to the aforementioned problem. The requirement is merely to have a larger, expanded space for the known sealant layer; one skilled in the art would easily conclude that an expanded portion solves the problem of having an expanded area.
>
> Having expanded portions at tube ends is especially obvious as expanded portions are so old and well known. The patents to Edwards and Wanderer are again cited as examples of prior art showing containers whose free open ends are expanded for stacking purposes.

In his response dated March 24, 1975 to the Final Action the applicant stated (in part):

> The critical point is that the solution proposed by the applicant to the problem defined in paragraph 1 on page 2 of the Official Action solves a long standing problem, that is, of the success or failure of stacked packaging of collapsible tubes of the type contemplated by the present application. If the solution proposed by the applicant were so obvious as the Examiner suggests, surely it would have occurred to a skilled workman before. The fact is that such a solution has not suggested itself to such a skilled workman and that manufacturers of

> the packages defined in the present application have been struggling with the problems described in page 2 of the specification for years, until the inventor of the subject matter of this application proposed the solution that is taught therein. It would be most inequitable, it is suggested, for the contribution made by the inventor of the subject matter of the present application to be an outright gift to the public. The public would not be deprived of the right to do anything that it is now entitled to do by the grant of claims like those now before the Office and it is pointed out that one of the objects of the patent system is to reward innovators with a limited monopoly in return for the contribution they have made. (they must make an inventive contribution)

The question to be considered is whether or not the claims are directed to a patentable advance in the art. Claim 1 reads:

> A flexible container comprising a side wall defining a conical tube, said tube being open at one end thereof and having a truncated conical section at said open end integral therewith, with the truncated conical section having a sealant layer on the inner surface and a diameter expanded beyond the normal wall of the conical tube whereby the smallest diameter of the conical section is larger than the largest diameter of the conical tube to enable another tube to penetrate the container to a depth at which the walls of the tubes are substantially in surface contact.

It is acknowledged on page 2 of the applicant's disclosure that "tubes are frequently coated with a thin annular coating of a sealant, such as liquid rubber or similar material which operates after drying to fill any voids which may be created in the fold to provide a tight seal in the fold." This is the type of sealing arrangement that is shown in the Westin citation where a ring of cement is coated on either or both the inner and outer end walls of the tube to provide a hermetic seal when it is subsequently heated.

Stacking of empty tubes to facilitate shipping, storage, and to prevent crushing by providing a reinforcing effect is shown in the Duffau patent. On page 2, the disclosure of the present application states, "While the sealant layer is usually quite thin (e.g. having a thickness of the order of about 0.3 mm.), it serves to prevent stacking of a plurality of tubes in which the tubes comprising the stack are substantially in surface contact[with each other] ."

It is true that the layer would not allow the tubes to telescope as compactly as if the layer is not present, but it does not prevent stacking altogether since the taper shaped tube would still fit into the adjacent tube. However it would be restricted in the distance it would slide in because of the presence of the layer of glue.

There is consequently some doubt that the stacking of tubes having an adhesive ring therein would provide the needed reinforcing.

We must agree with the examiner that both Edwards and Wanderer show the concept of an enlarged end portion in containers. The purpose there, however, is to facilitate separation of the containers from nested stacks. Neither of them is concerned with the nesting of containers which are subsequently closed, or which contain an adhesive ring therein. Therefore, we do not think that either Edwards or Wanderer really provided a solution to the problem facing the applicant.

The examiner states that the use of a sealing ring creates a problem in stacking and it is his contention that an obvious solution to the problem is the expansion of this area as done by the applicant. Certainly the use of tapered tubes for stacking or storage has been known for many years. Similarly the use of a glued portion at the bottom end of the tube has also been known for a long time.

The additional alteration introduced by the applicant is furthermore quite simple, and at this point in time might well appear to be obvious. Even the applicant has referred to the "extreme simplicity of the subject matter of the present invention" (response of March 24, 1975, p. 2).

What disturbs the Board, however, is that it is fully forty years since the Westin citation, which shows the use of sealants to close collapsible tubes for creams and glue. It is even longer since such tubes were made conical and nested to permit transportation without damage. The only reference in the final action showing that feature is Duffau (1959). However we have also had drawn to our attention by the examining staff a very early Canadian patent, no. 239457, Barrow, Dec. 7, 1920, which also discloses that feature, and which appears to directly anticipate Duffau.

It took consequently forty years before these two features were brought together by means of the alteration introduced by the applicant. Yet once done, as was made clear at the hearing, it had tremendous commercial success. Why such a successful yet simple, and obviously mechanically desirable improvement was delayed so long if it were in fact obvious in the inventive sense is perplexing. Packages of this type are used in the hundreds of millions. With such activity and with consequently so much to be gained by even minor improvements, one might well wonder why the present step was not taken earlier.

Subsequent to the hearing the applicant's agent provided the Board with confidential information showing extensive licensing of the invention in Europe and elsewhere which attest to its commercial success and acceptance by those skilled in this art. He also listed twenty-one patents granted to the applicant for the invention. This information had not of course been available to the Canadian examiner when he made his assessment of patentability.

That commercial success may be a factor in assessing ingenuity was recognized by the Canadian courts in The King v American Optical, 11 Fox Pat. C. 62 at 89. Similarly it has been held that the simplicity of an invention does not preclude it being patented (Wright v Adams and Westlake 1928 Ex. C.R. 112 and 1929 S.C.R. 81; Electrolier v Dominion Mfrs. 1933 Ex. C.R. 141 & 1934 S.C.R. 436 and Jamb Sets v Carlton, 1964 Ex. C.R. 377 & 1965 S.C.R. v)

The Board has consequently concluded that while the invention in question is indeed simple, and the inventive step is short, the applicant has raised sufficient doubt about it being obvious that we should recommend that the rejection be withdrawn.

Gordon A. Asher
Chairman
Patent Appeal Board

Having reviewed the prosecution of this application and the recommendations of the Patent Appeal Board, I have concluded that the Final Rejection should be withdrawn. I direct that the application be returned to the examiner to resume prosecution.

J.H.A. Gariépy
Commissioner of Patents

Dated at Hull, Quebec

this 30th. day of November, 1976

Agent for Applicant

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