W. L. WRIGHT.

PAPER CONTAINER FOR GREASE LIKE SUBSTANCES.

APPLICATION FILED JUNE 20, 1918.

1,417,707. Patented May 30, 1922.

2 SHEETS—SHEET 1.

Fig. 1.

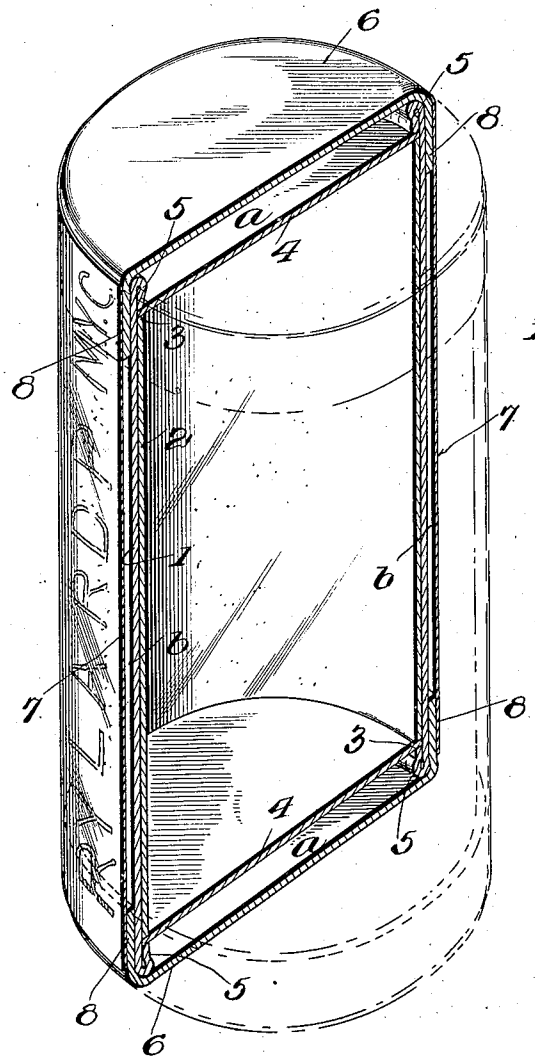
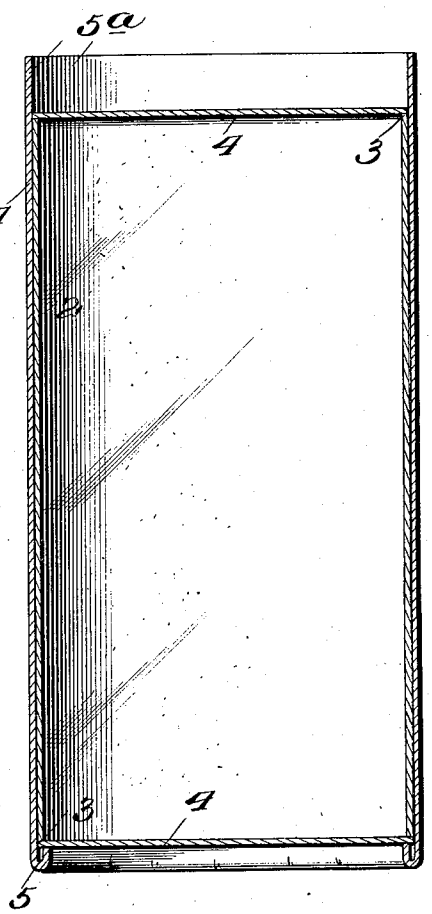


Fig. 1a



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2 SHEETS—SHEET 2.

Fig. 2.

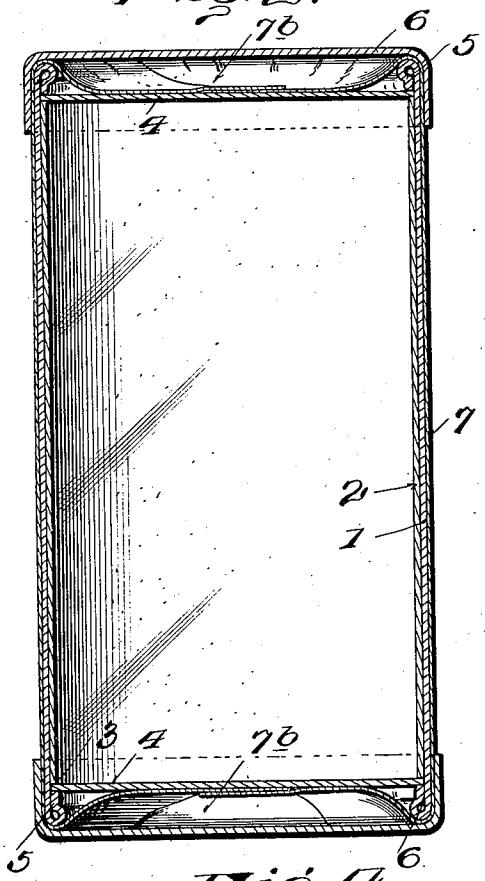


Fig. 3.

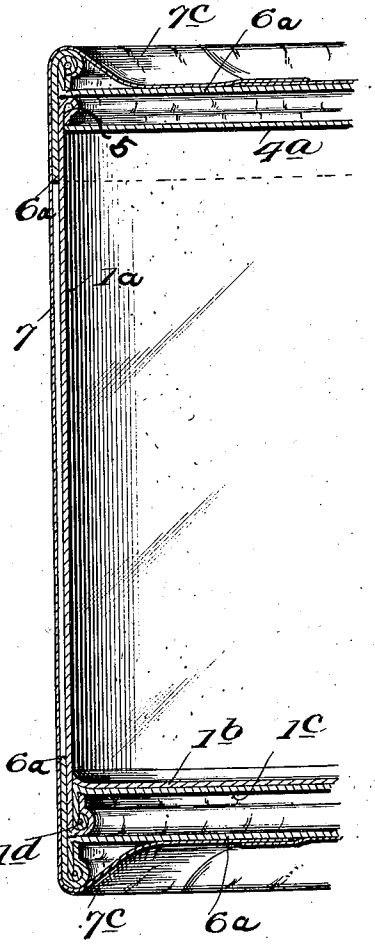
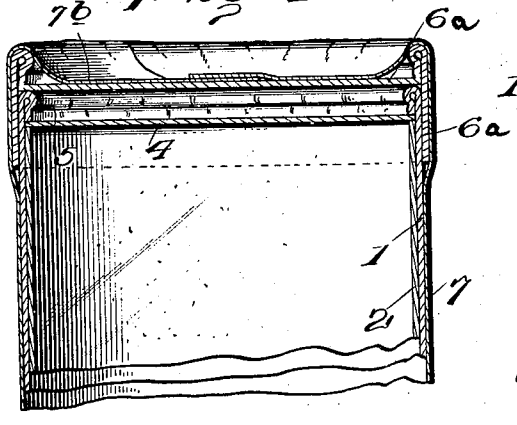


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILBUR L. WRIGHT, OF FULTON, NEW YORK, ASSIGNOR TO SEALRIGHT CO., INC., OF FULTON, NEW YORK, A CORPORATION OF NEW YORK.

PAPER CONTAINER FOR GREASELIKE SUBSTANCES.

1,417,707. Specification of Letters Patent. Patented May 30, 1922.

Application filed June 20, 1918. Serial No. 240,935.

To all whom it may concern:

Be it known that I, WILBUR L. WRIGHT, a citizen of the United States, and resident of Fulton, county of Oswego, State of New York, have invented certain new and useful Improvements in and Relating to Paper Containers for Greaselike Substances, of which the following is a specification.

This invention relates to certain improvements in paper containers for grease-like products; and the objects and nature of the invention will be readily understood by those skilled in the art in the light of the following explanation of the accompanying drawings illustrating what I now believe to be the preferred mechanical expressions or embodiments of the invention from among other forms, constructions and arrangements within the spirit and scope thereof.

It has been established, that certain grease-like substances such as oils and fats, can be preserved against becoming rancid and kept sweet and in the desired condition for longer lengths of time when packed in paper containers than when packed in tin or other containers formed of metals that are subject to chemical action when in contact with such grease-like substances.

A considerable percentage of tin cans in which grease-like substances are packed permits seepage of the contents to the outer surfaces of the cans rendering it exceedingly difficult to cause labels to adhere to and remain on the cans and causing discoloration of labels and spoiling the appearance of the cans.

Tin cans are also expensive and more or less difficult to obtain in quantities.

On the other hand, to the best of my knowledge and information, various serious obstacles and problems have, heretofore, stood in the way of the successful commercial production and general use of paper containers or cans for packing and shipping grease-like substances such as oils and fats.

A paper can for this purpose must be of such construction as to permit economical quantity production thereof by machinery and consequent sale at a comparatively low price; such can must be of durable and somewhat flexible structure to withstand the stresses and strains of handling in shipment and transit; must be of such structure as to permit pasting of exposed labels thereon and provide for the protection of such labels from the grease-like contents of the cans to prevent discoloration of the labels; and said cans must provide barriers against passage of grease to reduce to the minimum seepage of the grease-like contents of the cans to the outer or exposed surfaces thereof, and furthermore such cans must be more or less pleasing in exterior appearance, not "freak-like" in appearance or construction, but of such formation as not to require difficult operations and consequent expert or skilled mechanics or employees in packing the cans and completing the assembly and sealing thereof at the packing plant for storing and shipment.

It is an object of my invention to provide a paper can for packing grease-like substances that will meet the foregoing requirements.

With these and other objects in view my invention consists in certain novel features in construction and in combinations and arrangements as more fully and particularly set forth and specified hereinafter.

Referring to the accompanying drawings:—

Fig. 1, is a sectional perspective of an assembled sealed paper can embodying my invention.

Fig. 1ª, is a longitudinal section of the can of Fig. 1 before being completely assembled, filled and sealed.

Figs. 2, 3 and 4, are longitudinal sections of assembled sealed paper cans of modified constructions.

The body of the cylindrical can of Figs. 1 and 1ª embodies outer and inner separately-formed cylindrical tubes or barrels 1, 2, usually composed of spirally wound and pasted sheets or bands of paper such as produced by paper tube winding machinery.

However, I do not wish to limit myself to such formation of the inner and outer plies or barrels of the can body.

The inner tube or barrel 2, is relatively short in length and is snugly fitted, and if so desired cemented within the outer tube 1 midway between the ends thereof, to form the annular shoulders or seats 3, within and at both ends of the can body, and each spaced a substantial distance from the adjacent projecting end of the outer tube of the body.

When this can is closed or sealed, after being filled with a grease-like product such as oil or fat, circular paper disks 4 closely

fit within the extended ends of the outer tube and against the shoulders 3 formed by the end edges of the inner tube, and are thus tightly held and sealed by the annular locking crimps 5 tightly fitting the outer faces of the disks and formed by the projecting ends of the outer tube under the operation of a suitable crimping or spinning head or tool. This tool doubles the straight projecting ends of the outer tube inwardly and downwardly or backwardly and compresses the same against the closing disks 4 to form permanent locking crimps tightly sealing the end disks against said shoulders. The crimps thus form heavy protecting annular rims 5 at the ends of the body so that the end closures or disks 4 are inset.

Cylindrical paper caps or protecting covers 6 fit longitudinally onto the body and over the ends thereof. These end caps snugly and exteriorly fit the body and extend substantial distances longitudinally thereof and entirely enclose the body ends and closures.

By reason of the inset of the closure disks 4, within the body ends, the closed ends of the caps are spaced substantial distances from said disks and intervening closed chambers *a*, are formed within the locking crimps 5 and between said disks 4 and the flat outer end walls of the caps or covers 6.

The filled sealed can is exteriorly surrounded by a cylindrical sheet 7 forming the cylindrical exposed surface of the can. This sheet surrounds the cylindrical flanges of the caps 6 and stretches from one cap to the other, and hence the portion of the sheet intervening between the flanges of the two caps is spaced outwardly from contact with the outer surface of the can body that intervenes between the caps.

The space or closed chamber *b* is thus formed between sheet 7 and the adjacent surface of the can body.

The sheet 7 is secured to the can by suitable adhesive at 8 between the outer surfaces of the cap flanges and the inner surface of the end portions of the sheet. This sheet 7 is preferably composed of paper constituting the can label and is folded or stretched tightly around the body and secured as described, with its edges overlapping and secured together, and it is this label of the filled, sealed completed package, that I particularly desire to protect and guard from contact with the grease-like product within the can.

The container manufacturer produces the can as shown for instance by Fig. 1ª, and supplies the same thus formed to the packer or shipper of grease-like substances, with the necessary end caps or covers 6, and if need be, with the sheets, that in the filled completed package, form the labels 7.

The can manufacturer produces the can body and inserts the bottom closure disk 4 and locks the same by forming the bottom locking crimp 5 to close and seal the bottom of the can, but leaves the projecting upper end 5ª of the outer tube of the body in its original straight cylindrical form, and if so desired inserts the upper disk 4 therein for shipping so that it can be readily removed when the can is to be filled through its open upper end.

The can manufacturer treats the surfaces of closure disks 4, (usually both surfaces and the edges thereof); the inner surfaces of slip caps or covers 6; the inner surfaces of the can bodies, and usually the inner surfaces of the label sheets 7, to render the same approximately "grease proof".

Various chemicals and processes might be used and followed for this purpose to reduce to the minimum possibility of the paper absorbing oils and like greases or permitting seepage therethrough by capillary action or otherwise, as will be readily understood by those skilled in the art.

The can as shown by Fig. 1ª, (with or without the upper disks 4, in the otherwise open tops of the cans) and duly rendered approximately grease proof, is thus sold to the trade with the appropriate exterior slip caps or covers.

The packer of oils and other grease-like substances, then fills these cans through the open upper ends thereof, and when filled, inserts the disks 4 in the open upper ends thereof, and by appropriate crimping implements, spins down the dry paper projecting ends 5ª to lock the top disks 4 and seal the upper ends of the cans, forming the top locking crimps 5 as before described. The grease-proofed comparatively-heavy snugly-fitting end-cushioning and protecting caps or covers 6 are then placed on the can, and the label or sheet 7 is finally applied and secured as hereinbefore described, and the package is completed, sealed, and ready for storage or transit.

A more or less effective barrier against passage or seepage of oils and greases directly through the paper walls, is established by the grease proofing process which is designed to coat the paper surfaces or impregnate the paper with substances insoluble in the oils or greases to be packed or to otherwise render the paper approximately proof against passage or seepage of such substance.

The can of Fig. 1ª, is preferably internally subjected to such grease proof treatment in an effort to fill and seal the angle or corner where the bottom disk 4 and inner tube 2 meet to prevent so far as possible outward seepage of oil or grease under the end edge 3 of the inner tube. This also provides a barrier designed to reduce seepage at this joint to the minimum.

However, as all portions of the paper walls and bottom joints of all the bodies of a series of paper cans may not have become thoroughly grease proofed, and as the joints at the upper ends of the cans cannot be effectively grease proof either before or after the cans are filled, it is advisable to provide additional mechanical or structural barriers against seepage of grease to the exterior label or outer surface of the can.

The exterior slip caps or covers 6 not only cushion and protect the filled can against damage by rough treatment during transportation and handling, but also provide such structural barriers inasmuch as said caps are separated from the closure disks 4, by air spaces *a*, and also said caps support the label 7 from contact with the walls of the body. Even if some portion of the label is, during handling of the package, pressed into engagement with the outer surface of tube 1 of the body, said label will be protected by its grease proofed inner surface in the event that grease in some manner had worked to some portion of the outer surface of said tube.

It is of course within my invention to extend either or both ends of the label or sheet 7, beyond the exterior end caps 6, so that the extended ends of the sheet can be crushed or folded in at either the interior or at the exterior of the cap ends and cemented in position, if so desired, and thus serve as added protecting and cushioning means.

The sealed grease or oil package can be opened in any suitable manner. For instance, the label can be cut or broken and the upper exterior cap 6 can then be forced off thereby exposing the inset top closure disk 4. This disk can then be cut out around the circle of the locking crimp 5, and removed, so that free access can be had to semi-solid greases such as butter, lard, or substitutes thereof, or the like, or where the greases are in liquid form, as oil, suitable openings can be formed in the upper disk 4 to permit pouring of the liquid.

In Fig. 2, I show the can or closure of Fig. 1, with the exterior sheet or label 7 fitting the exterior surfaces of the outer tube 1 of the can body (instead of being secured to the outer cylindrical surfaces of the end caps) with the ends of the label embraced and covered by the end caps. Either or both ends of this label can be extended and crushed or folded inwardly into the spaces within the locking crimps and onto the inset disks 4, and thus confined within and by the exterior end caps. If so desired, the extended infolded ends of the label can be cemented to the end closures 4.

In Fig. 2, I show the extended label ends 7^b thus folded in and secured down on and to the inset closure disks 4 and constituting cushioning means and grease barriers.

In this construction, the label is protected against grease by the grease proof surfaces and by the mechanical or structural barriers.

Cans of this formation can be furnished or sold by the can manufacturer with the label in place on the body and with the upper end open as before explained in describing Fig. 1^a. In fact, both the structures of Figs. 1^a and 2 can be supplied with the exterior caps in normal position on the lower ends of the body and removably fitted on the extended upper ends 5^a of the body.

In Fig. 3 of the drawings, I show a closed sealed package wherein the cylindrical body wall is composed of a single paper tube 1^a without the inner barrel forming shoulders 3.

The bottom closure of this can is formed by inner and outer sealing disks 1^b, 1^c. The outer disk 1^c being flanged and secured by lock crimp 1^d formed by rolling or crimping together the lower end of the tube and the disk flange. This inner and outer disk bottom closure is disclosed and claimed by my Patent No. 1,235,750, Aug. 7, 1917. This tube 1^a is formed of extra length to provide the extended upper end necessary to form the top locking crimp 5 that secures the flat top closure disk 4^a. This can is supplied by the can manufacturer to the trade or packer, with its upper end open, and accompanied by top disk 4^a, exterior caps 6^a, and if so desired, the label 7. The can as thus produced by the manufacturer is interiorly grease proofed, as hereinbefore described. The disk 4^a, the end caps and the label are also grease proof. The label can be secured to the can body as in Fig. 2, although I prefer to secure the same as in Fig. 1, after the can has been filled.

This can of Fig. 3 is intended for semi-solid or non-fluid greases, such as lard, butter, or substitutes therefor. After the can has been filled with such non-fluid substance, the disk 4^a is inserted in the top of the can and rests on and is supported by the semi-solid contents while the crimping or spinning head is crimping down the upper end of the body to form the locking crimp 5. After the can has thus been closed, the end caps are applied and the label affixed.

In the grease package of Fig. 3, I show exterior end slip caps 6^a having inset end walls. These caps are composed of paper tubes or shells and flanged disks, the tube end and disk flange being secured together by a lock crimp as will be understood by those skilled in the art. In this package, I show the ends of the label extended and covering the exterior end caps 6^a and preferably folded into the inset ends of said caps, at 7^c, and if so desired secured to the end walls thereof.

In Fig. 4, I show one end of the package of Fig. 1, with the exception that end caps 6^a

(of the construction shown by Fig. 3) are employed, and the grease-proofed label 7 is cemented to the tube 1 and extends over and covers one or both end caps and is pressed at 7^b into the inset ends thereof.

I employ the term "grease" herein in a broad generic sense to include oils, fats and greases.

It is evident that various changes, modifications and variations might be resorted to without departing from the spirit and scope of my invention and hence I do not wish to limit myself to the exact disclosures hereof.

What I claim is:—

1. A grease package consisting of a paper can having sealed paper closures at both ends, cushioning flanged slip caps exteriorly fitting the ends of said can and covering said closures so as to form grease-barriers, and a paper sheet extending around and offset from said can to form an intervening air space and fitting and secured to the outer surfaces of the flanges of said caps.

2. A grease package embodying a surrounding exterior label sheet protected by grease barriers from discoloration by seepage of grease from the interior of the package, said package consisting of a paper material can having sealed closures at both ends and projecting end flanges, and slip caps exteriorly fitting both ends of the can and covering said closures so as to cushion the can ends and form grease barriers, substantially as described.

WILBUR L. WRIGHT.