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METHOD OF PACKAGING HYGROSCOPIC SPONGES

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FIG. 1.

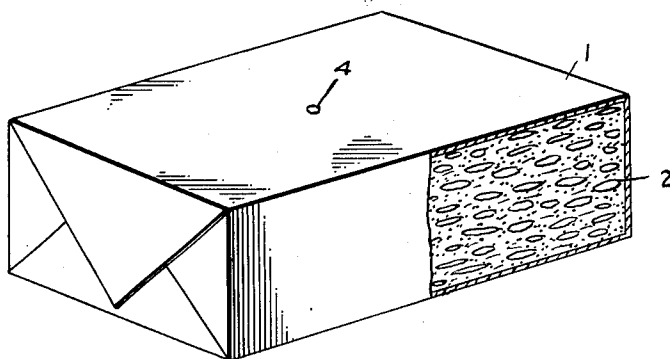
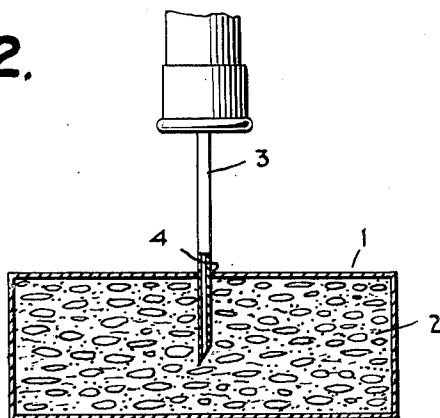


FIG. 2.



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METHOD OF PACKAGING HYGROSCOPIC SPONGES

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4 Claims. (Cl. 53-6)

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This invention relates to a new method of packaging hygroscopic sponge for the retail trade, and more particularly to the packaging of what is commonly known as cellulose sponge.

In the manufacture of cellulose sponge, one of the last steps is to dry out large blocks of the sponge after it has been removed from the molds and treated, after which the large block is sliced into smaller blocks of desired size and packaged in a substantially dry condition, in light cellophane or similar material, for the market. It has been found that the cut blocks of dry sponge will in time shrink, warp out of shape and get very hard, the degree of which depends upon the humidity of the surrounding air. This property of cellulose sponge and similar hygroscopic sponges is very undesirable from a sales point of view. If the buying public are not familiar with the physical properties of such sponges, and if they do not know that the sponge will become soft and flexible when wet, the chances are they will pass up the relative hard cellulose sponge when it is displayed on a counter along with soft rubber sponge and buy the non-hygroscopic rubber sponge because of its softness and flexibility.

In my pending application Ser. No. 747,589, filed May 12, 1947, I described a method of packaging hygroscopic sponge in a wet condition, but all of the possible variations were not fully covered in the specifications. This application is intended to cover one variation which is considered practicable and very desirable from a packaging and sales point of view.

The principal object of the invention is to provide a cheap and efficient method of packaging hygroscopic sponge in a wet condition so that it will remain soft and flexible for a considerable period of time.

Another object is to provide a method of adding water or other softener to the hygroscopic sponge after it has been packaged in a substantially dry condition in a suitable container or casing that will retard the moisture vapor transmission rate through the casing, so that the sponge will become soft and flexible and will remain so for a considerable length of time.

A further object is to provide a packaged hygroscopic sponge that will remain soft and flexible for a considerable length of time to increase the sales appeal over the now conventional method of packaging the sponge in a substantially dry and hard condition, when compared with a sponge in a wet, soft and flexible condition.

Other objects and advantages will be readily apparent from the following description:

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Figure 1 is a perspective view of a package containing the hygroscopic cellulose sponge, and,

Figure 2 is a vertical section through the package and sponge and the tubular needle.

A block of cellulose sponge or other hygroscopic sponge is cut to the desired size for the market, and packaged in a substantially dry condition by conventional methods in a polymerized ethylene film such as "Visqueen," or other suitable transparent and flexible material such as Pliofilm, having a low moisture vapor transmission rate that will retard evaporation and retain the moisture content of the sponge for a long period of time.

After the block of sponge has been thus packaged and sealed, a suitable quantity of distilled water, or other softener mixed with a mold of fungus inhibitor is injected into the sponge through a hollow needle which punctures the film or casing in which the sponge is packaged. The water or softener rapidly spreads through the hygroscopic sponge and causes it to become soft and flexible. The small hole punctured by the needle in the film or casing does not materially affect the moisture vapor transmission rate of the film or casing. According to tests over a period of years, it has been found that a polyethylene or "Visqueen" film .003" thick will retard moisture evaporation from the sponge for a long period of time and will retain the sponge in a moist, soft and flexible condition for a period of twelve months or more, depending upon the humidity of the surrounding atmosphere. This retention of the sponge in a soft and flexible condition materially increases its sales appeal to those not familiar with the physical properties of the sponge.

In the drawings, the numeral 1 designates the transparent and flexible casing, which is moisture proof, within which the hygroscopic cellulose sponge 2 is enclosed. This sponge is shown as in a dampened condition and is soft and flexible. The numeral 3 designates a tubular needle of small diameter which is inserted through the wall of the casing and injects the water into the hygroscopic cellulose sponge by being forced into the sponge. The water is supplied through the needle from any suitable source. Sufficient water is supplied to the sponge so that it is rendered soft and pliable. After the water is supplied to the sponge, the needle is withdrawn and the small aperture 4 formed by the needle is left uncovered. It has been found by actual tests that this uncovered small aperture does not materially

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or perceptibly impair the moisture proof condition of the container.

My invention is not limited to the foregoing description nor to the specific details stated. Variations may be made in the packaging of the hygroscopic sponge without departing from the spirit and intent as set forth in the following claims:

I claim:

1. The method of packaging hygroscopic cellular sponge so that it will retain its condition when moistened and will not harden, shrink and warp when kept for a long time, comprising enclosing the dry hygroscopic cellular sponge in a thin substantially transparent container which is moisture proof to a high degree, inserting a tubular needle of small diameter through the wall of the container to form a small aperture for the passage of the needle into the container and injecting the needle into the hygroscopic cellular sponge, passing water through the tubular needle in a sufficient amount to dampen the hygroscopic cellular sponge so that it is moistened sufficiently to render the same soft and flexible and improve its appearance, and then withdrawing the tubular needle from the small aperture and leaving such small aperture uncovered.

2. The method of packaging hygroscopic cellular sponge so that it will retain its condition when moistened and will not harden, shrink and warp when kept for a long time, comprising enclosing dry hygroscopic cellular sponge in a flexible substantially transparent container which is moisture proof to a high degree, inserting a tubular needle of small diameter through the wall of the container to form a small aperture for the passage of the needle into the container, passing water through the tubular needle to the hygroscopic cellular sponge in a sufficient amount so that it is moistened to render the same soft and flexible and improve its appearance, and then withdrawing the tubular needle from the small aperture.

3. The method of packaging hygroscopic cellular

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sponge so that it will retain its condition when moistened and will not harden, shrink and warp when kept for a long time, comprising enclosing the dry hygroscopic cellular sponge in a flexible substantially transparent container which is moisture proof to a high degree, inserting a tubular needle of small diameter through the wall of the container to form a small aperture for the passage of the needle into the container, passing a moistening fluid through the tubular needle in a sufficient amount to dampen the hygroscopic cellular sponge so that it is moistened sufficiently to render the same soft and flexible, and then withdrawing the tubular needle from the small aperture.

4. The method of packaging hygroscopic cellular sponge so that it will retain its condition when moist and will not harden, shrink or warp when kept for a long time, comprising enclosing the substantially dry hygroscopic cellular sponge in a flexible light transmitting container which is moisture proof to a high degree, passing a tubular needle through the wall of the container and passing a volatile liquid moistening agent through the tubular needle and into contact with the substantially dry hygroscopic cellular sponge within the container and in a sufficient amount to dampen the hygroscopic cellular sponge and render the same soft and flexible, and withdrawing the tubular needle from contact with the container and holding the volatile liquid moistening agent within the container for a long time.

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REFERENCES CITED

The following references are of record in the file of this patent:

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