Feb. 14, 1967 O. C. PALMER, SR 3,304,069

EXPANSIBLE COOLER PAD

Filed Dec. 16, 1963

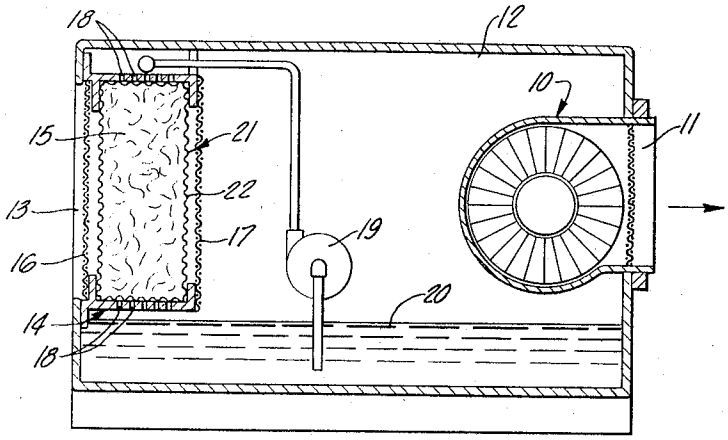


FIG. 1.

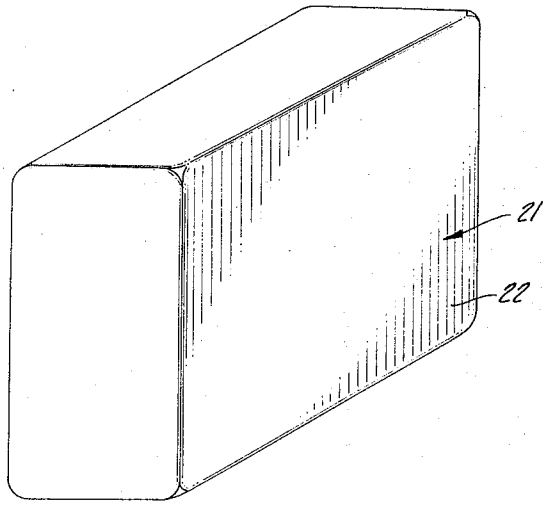


FIG. 2.

INVENTOR.
OSCAR C. PALMER, SR.
BY Lyon & Lyon
ATTORNEYS

United States Patent Office 3,304,069 Patented Feb. 14, 1967

3,304,069

EXPANSIBLE COOLER PAD

Oscar C. Palmer, Sr., 2235 W. McDowell Road, Phoenix, Ariz. 85009

Filed Dec. 16, 1963, Ser. No. 331,055
10 Claims. (Cl. 261—94)

The present invention relates generally to the water absorbent cooler pads used in evaporative coolers. More specifically, the invention relates to replaceable cooler pads employed in evaporative coolers wherein water-absorbent material is positioned at the air intake and water is circulated over it, whereupon the air is drawn through the wet material resulting in evaporation of the water and consequent cooling of the air.

A problem with the usual evaporative cooler installation is that after operating a while, the cooler pad, being moist and also being positioned adjacent the intake, collects a considerable amount of dust and dirt which interferes with the efficiency of the cooler. The remedy is to replace the dirty material with a new, clean supply. The material is loose and is retained in position only by a frame in the cooler housing itself, and usually is excelsior or some similar substance. The air intake passage must be carefully packed to fill the entire air passage to be sure all the air passes through the wet pad and not around it. This requires that the cooler be dismantled, repacked and reassembled, which is a time consuming and dirty job.

It is the object therefore of the present invention, to provide a packaged cooler pad allowing a convenient means for replacing old absorbent material in an evaporative cooler.

It is another object of the present invention to provide a packaged cooler pad shaped to fit into the space adjacent the air inlet whereupon said pad can be allowed to fill the entire inlet passage when the package is removed.

It is a further object of the invention to provide a means of packaging loose absorbent material which may be compressed, shaped to fit into a frame adjacent the air inlet of an evaporative cooler, whereupon said packaging is removed allowing the material to expand and fill the said frame.

It is a further object of this invention to provide a packaged cooler pad conveniently stored by manufacturers and retailers without mess or fear of expansion prior to use.

Other important features and advantages which are believed to be novel are set forth in detail in the accompanying specifications which may be more readily understood when read with the accompanying drawings, in which:

FIGURE 1 is a side elevation of an evaporative cooler showing the absorbent cooler pad in place.

FIGURE 2 is a perspective view of a compressed cooler pad in its envelope.

A side elevation of an evaporative type cooler is shown in FIGURE 1, in which a blower **10** actuated at the outlet **11** blows air out of the housing **12**, drawing air into the housing through the inlet **13**. Positioned peripherally about the inlet **13**, is a frame **14** which holds the loose water-absorbent material **15** therein. The frame **14** is provided with front and rear frames or screens **16** and **17** to retain the loose material **15** within frame **14**. Both top and bottom portions of frame **14** are provided with water distribution troughs or tubes with a number of holes **18** to allow free water circulation.

A pump **19** is normally provided to circulate the water **20** stored in the bottom of housing **12** up to the top of frame **14** where the water runs down through the absorbent material **15** where it evaporates, cooling the air passing therethrough.

FIGURE 2 shows cooler pad **21** made in accordance with this invention. When the material **15** in the cooler requires changing it is removed and a new pad inserted. The new pad **21** may be formed of excelsior, or other absorbent material. The pad **21** is shaped to conform to the configuration of the frame **14** so that it will completely fill the air passage at inlet **13**. Envelope **22** retains the material **15** in the desired shape until put into use. If desired, the pad **21** may also be compressed to facilitate insertion of the pad into frame **14**. In addition, when the envelope is removed expansion of the pad will assure complete packing of the air passage. Envelope **22** is made of a water-soluble substance.

The new pad need only be inserted in the frame **14** and no packing is needed. When the cooler is operated, the water will dissolve the envelope, allowing the absorbent material to expand, filling the frame. Thus, the efficiency of the cooler is restored quickly, neatly and economically. Storage problems of loose excelsior are completely eliminated, and sales appeal of the pads definitely enhanced.

There are several materials available from which satisfactory dissolvable envelopes can be made. A film based on polyvinyl alcohol resin sold under the trade name Gelvatol may be used. Also, a film may be made from sodium carboxymethylcellulose or other methylcellulosic derivatives. A film having a moderate amount of strength has also been made from starch.

While particular embodiments of the present invention have been shown and described, it will be obvious to those skilled in the art that changes and modifications may be made without departing from this invention in its broader aspects, and, therefore, the aim in the appended claims is to cover all such changes and modifications as fall within the true scope and spirit of this invention.

I claim:

1. In a water-absorbent material for use in evaporative coolers having an air inlet and discharge outlet, the combination comprising a quantity of absorbent material shaped into a pad to conform to the configuration of the air inlet, and a water soluble envelope enclosing said pad and retaining it in said configuration.

2. In a water-absorbent material for use in evaporative coolers having an air inlet and discharge outlet and a cooling pad frame, the combination comprising a quantity of absorbent material in the form of a pad, said pad shaped to conform to the configuration of the air inlet and adapted to be received in the cooling pad frame, an envelope enclosing said pad and retaining it in said configuration, said envelope consisting of a substance which will dissolve when water circulating in the cooler comes in contact therewith, said absorbent material thereupon expanding to fill said cooling pad frame.

3. An article of the type described in claim **2** wherein said absorbent material consists of wood excelsior.

4. An article of the type described in claim **2** wherein said envelope comprises a water-soluble film consisting of polyvinyl alcohol resin.

5. In a water-absorbent material for use in evaporative coolers having an air inlet and discharge outlet, the combination comprising a quantity of absorbent material compressed into the form of a pad, said pad being shaped to conform to the configuration of the air inlet, and a water soluble envelope enclosing said pad and retaining it in its compressed state.

6. In water-absorbent material for use in evaporative coolers having an air inlet and discharge outlet and a cooling pad frame, the combination comprising a quantity of absorbent material compressed into the form of

a pad, said pad being shaped to conform to the configuration of the air inlet and adapted to be received in the cooling pad frame, an envelope enclosing said pad and retaining it in its compressed state, said envelope consisting of a substance which will dissolve when water circulating in the cooler comes in contact therewith, said absorbent material thereupon expanding to fill said cooling pad frame.

7. An article of the type described in claim **6** wherein said envelope comprises a water soluble film consisting of polyvinyl alcohol resin.

8. An article of the type described in claim **6** wherein said envelope comprises a water soluble film consisting of sodium carboxymethylcellulose.

9. An article of the type described in claim **6** wherein said absorbent material consists of wood excelsior.

10. An article of the type described in claim **9** wherein said envelope comprises a water soluble film consisting of polyvinyl alcohol resin.

References Cited by the Examiner

UNITED STATES PATENTS

2,138,874	12/1938	Myers	55—359
2,404,479	7/1946	Essick.	
2,750,027	6/1956	Cummings	206—0.5
2,856,166	10/1958	Goettl	261—29
3,191,666	6/1965	Brandt.	

FOREIGN PATENTS

352,960	7/1931	Great Britain.

HARRY B. THORNTON, *Primary Examiner.*

T. R. MILES, *Assistant Examiner.*