May 28, 1929. R. W. SCARLETT 1,714,633,

ICELESS SHIPPER

Filed Sept. 15, 1926

Fig. 1.

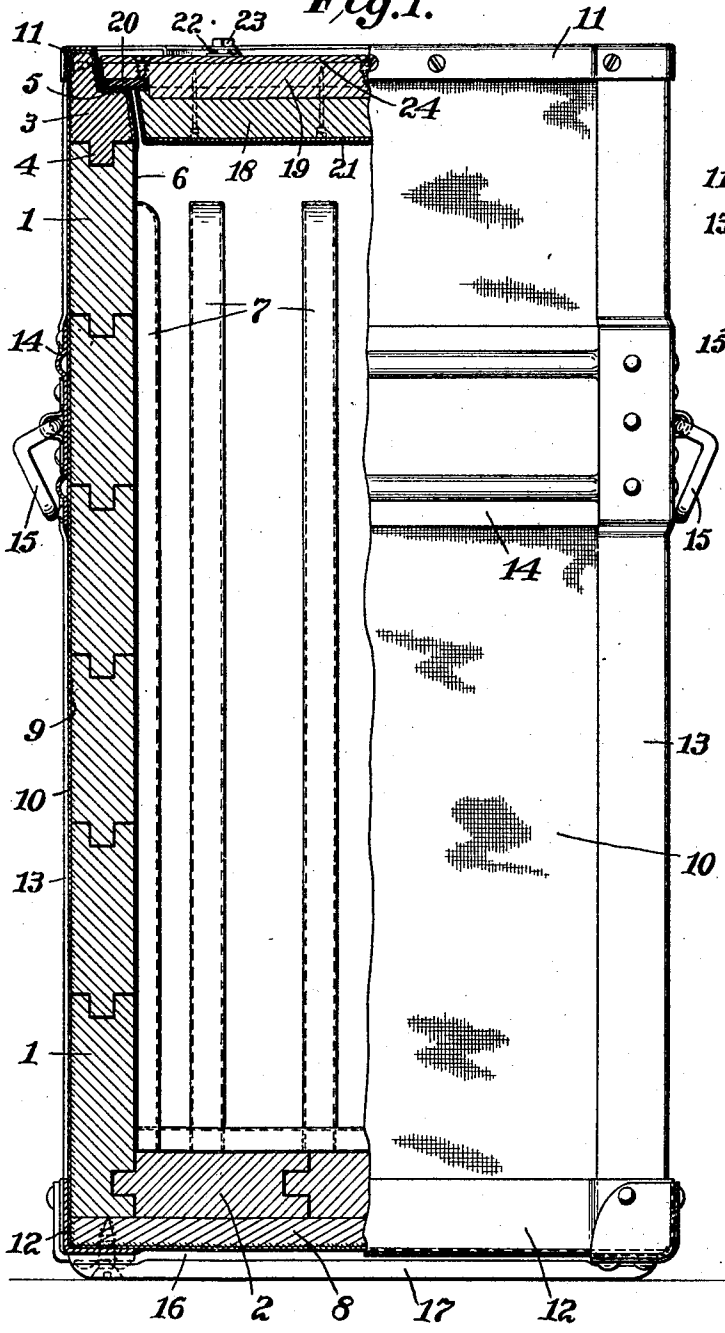


Fig. 2.

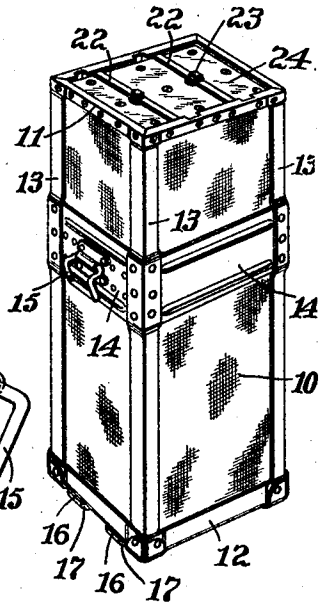
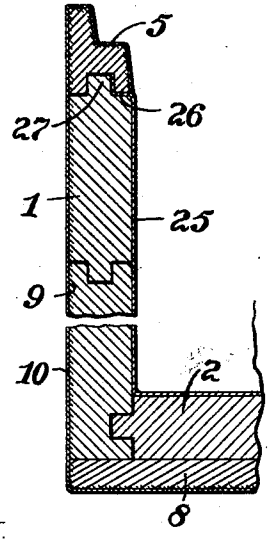


Fig. 3.



Inventor:

Robert W. Scarlett,

by Spear, Middleton Donaldson & Haap

Attys.

Patented May 28, 1929. 1,714,633

UNITED STATES PATENT OFFICE.

ROBERT W. SCARLETT, OF PHILADELPHIA, PENNSYLVANIA.

ICELESS SHIPPER.

Application filed September 15, 1926. Serial No. 135,666.

My present invention relates to an iceless shipper of a type in which perishable goods such as ice cream, butter, dairy products, candy or the like may be transported for reasonable lengths of time without melting or spoilage.

A principal object of the invention is the provision of a container of the above type which will be well insulated as to heat to protect the contents, which will be of minimum weight and bulk, while maintaining a rigidity and sturdiness of construction which will withstand the abuse to which the shipper would ordinarily be subjected.

In a copending application Serial No. 135,687 I have described a shipping container of a somewhat similar construction in which the material to be transported is to be placed within a metal can or the like contained within the shipper, while this present application is particularly concerned with a shipper which does not require a metal can yet an inner can may be made use of. This present shipper is especially adapted for brick ice cream packed in pasteboard containers, or butter and cheese in pasteboard cartons.

A container of this type is particularly adapted to be used with materials where carbon dioxide snow is used as a refrigerant.

To this end the invention consists in the provision of a container of the above type having insulation in the form of balsa wood staves joined together in a waterproof manner and thoroughly paraffined or made waterproof with some other desirable material on that face next the food being shipped. Balsa wood being extremely weak, it is necessary that it be reinforced on the outside, and this reinforcement may consist of a plurality of coats of waterproof glue, shellac or paint substance wherein the waterproof material is made to impregnate the outer pores of the balsa wood so as to form a sort of casehardened surface. Upon this hardened surface is then applied duck, drill, or other fabric and a plurality of coats of waterproof glue, shellac or paint substance painted upon this surface. This impregnated fabric materially assists in giving body to the soft insulation and prevents cracking and splitting. This balsa box is held within a metal frame composed of angle irons so constructed that the framework receives all shocks incidental to handling and so encloses the balsa box that the staves cannot separate. A top is suitably provided in any desired manner, properly insulated so that a compact, waterproof, closed container is provided. The interior compartment is preferably provided with hard wood battens arranged vertically on the side walls and horizontally on the bottom. Thus when packages of perishable goods are packed therein, they are spaced from the walls of the container, allowing circulation of air, which assists in the insulation; or a refrigerating gas such as is generated by the use of carbon dioxide snow.

The invention further consists in the combination, arrangement and construction of parts hereinafter shown and described.

In the drawings:

Figure 1 is a side elevation partly in section showing the structure of the shipper.

Fig. 2 is a perspective view of the completed shipper.

Fig. 3 is a fragmentary view of a modified form of container.

Referring now to the form illustrated, I have shown the balsa staves at 1 tongued and grooved, each stave being secured to its neighbor by means of waterproof glue or asphaltum in order to make a tight joint. The side staves have secured at their lower extremities a bottom 2 likewise of balsa staves dado jointed into the staves 1, the joint being packed with waterproof glue, asphaltum, or a good water proofing substance.

The upper edge of the vertical balsa staves are adapted to receive a hard wood ring 3 having a depending tongue 4 entering a similar recess in the staves 1 and made tight with asphaltum, glue or the like. The hard wood ring 3 is also provided with a shoulder 5 to receive the top, as will be more fully described hereinafter.

The interior of the balsa box thus constructed is provided with a thorough coating of paraffin shown at 6 to render the same waterproof and non-absorptive. Hard wood battens 7 are arranged vertically on the side wall of this balsa box and short battens are secured to the bottom portion thereof so as to keep the packages being shipped out of contact with the balsa proper to prevent wear and tear thereon and permit circulation of air and gas.

A hard wood veneering 8 underlies the

bottom of the container to give strength to the weak balsa bottom.

The balsa container is given a plurality of coats of waterproof glue, shellac or paint substance indicated generally at 9 so as to impregnate the pores of the balsa to form in the nature of casehardened surface. To this coated container a covering of duck, drill or other fabric is applied as at 10. This fabric covering is likewise given a plurality of coats of waterproof glue, shellac or paint substance so as to thoroughly attach the same to the balsa and shrink the fabric upon the same.

This insulation container is then placed within a metal frame composed preferably of galvanized angle irons comprising an upper reinforcing ring and a lower reinforcing ring, or angle as shown at 11 and 12, respectively, and enclosing within these rings or angles vertical braces 13, suitably secured to the reinforcing rings.

Between the rings and beneath the vertical braces are provided cross elements 14 to which handles 15 are attached. These cross elements likewise serve to brace the center of the balsa box and to prevent separation of the vertical braces.

To the bottom reinforcing ring or angle are secured cross straps 16 carrying wooden shoes or skids 17.

A top comprising a balsa block 18 is provided, which block is secured to the upper overhanging hard wood block 19, between which is fastened a rubber gasket 20. I have found it desirable to cover the balsa block with duck, drill, or other fabric as at 21 so as to protect the balsa wood and impregnate the same with paraffin in order to render this material to an extent waterproof. The gasket 20 is adapted to rest upon the shoulder 5 of the hard ring 3 and the top held in place by means of a plurality of spring arms 22 secured to the hard block 19 as by bolt 23 and adapted to engage the underside of the upper reinforcing ring or angle 11. A rust proof plate 24 may be set in the lid or top to prevent the lid warping.

It will thus be seen that the balsa box is made tight by means of waterproof glue or asphaltum and is prevented from separating in use by being rigidly held by the fabric covering and metal frame. This metal frame receives all of the shocks at angles and corners in shipment so that the relatively weak balsa construction is not depended upon to retain the shape of the container.

The glue impregnated fabric on the outside of the balsa box prevents wear which would ordinarily be received by the side walls and also prevents separation of the balsa staves. Obviously the glue, shellac or paint substance impregnated fabric may be painted as desired, which paint covering also assists in protecting the fabric.

In Fig. 3 is shown the container of somewhat similar construction except that in place of the hard wood battens I have shown a metal inner can at 25 having an upper shoulder 26 resting upon the top of the balsa staves. In this form I may groove or channel the bottom of the hard wood rim to receive a similarly shaped tongue 27 on the upper balsa stave. It will be noted that the extreme upper edge of the can 25 is adapted also to enter the groove in the wood rim, this edge and the tongue 27 being made tight by means of waterproof glue, asphaltum or other material of this nature.

I claim:

1. A portable insulated shipper comprising a box of relatively soft insulation material, its outer surface being impregnated with a waterproof substance, protective fabric, shrunk and anchored on said outer surface by said waterproof substance, the interior of the box having spaced apart hard wood protective strips, whereby articles placed within the box are kept out of contact with its interior walls, so that circulation may take place between said articles and said interior walls.

2. A portable insulated shipper comprising a box made of staves of relatively soft insulation material, the exterior surface thereof being impregnated with a waterproof substance, a protective fabric shrunk and anchored to said surface by said waterproof substance, and a metallic frame holding said staves in place, said frame including cross elements reinforcing the frame and carrying handles.

In testimony whereof I affix my signature.

ROBERT W. SCARLETT.