B. C. VAUGHN.

PAPER KEG.

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Fig. 1.

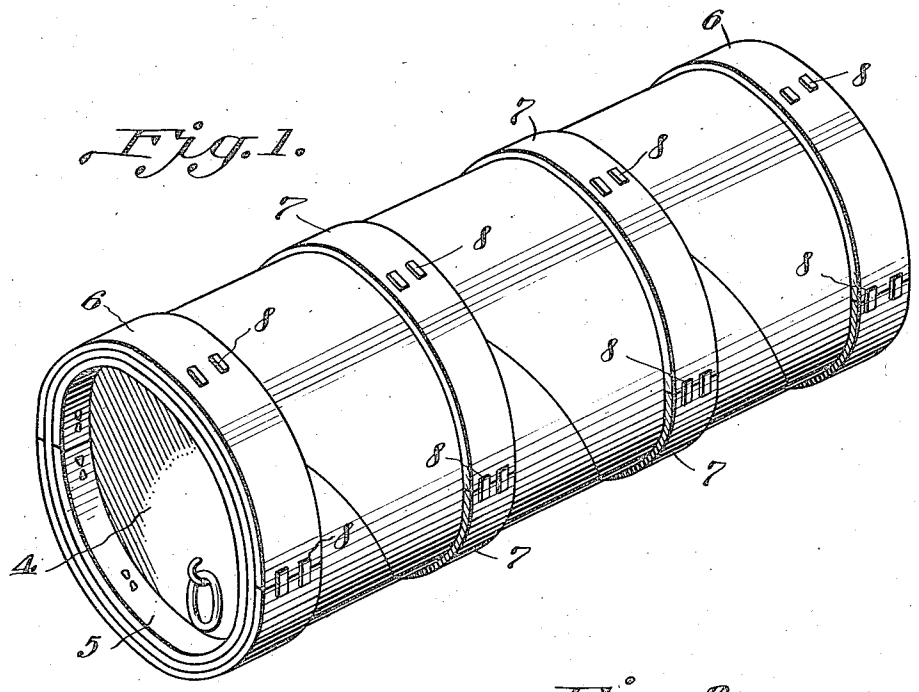
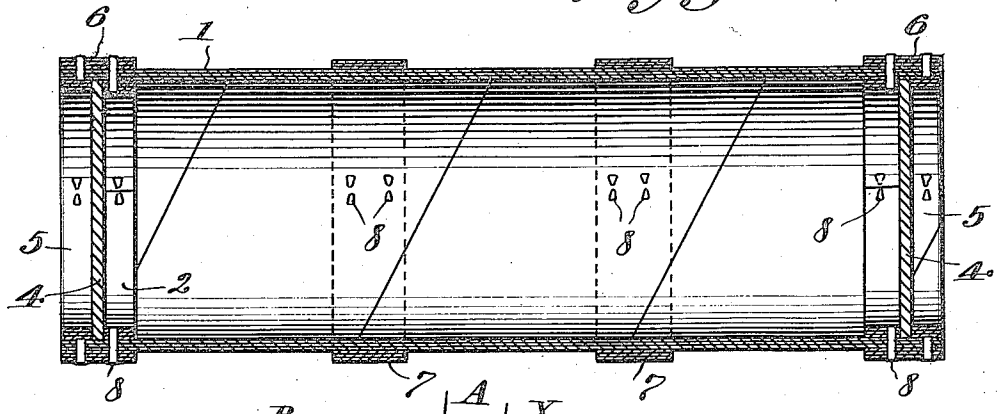


Fig. 2.



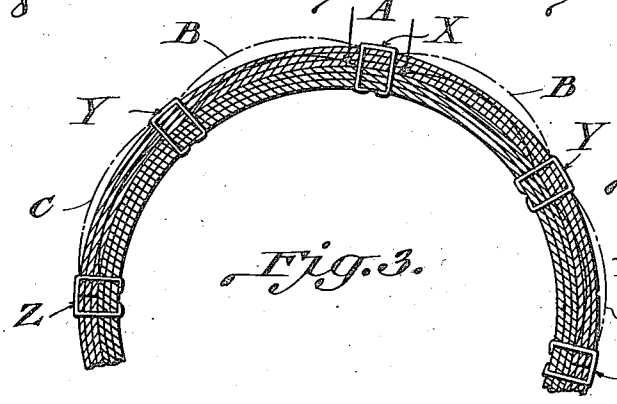


Fig. 3.

Inventor:
Bert C. Vaughn
By George W. Ramsey
Atty.

UNITED STATES PATENT OFFICE.

BERT C. VAUGHN, OF BROOKLYN, NEW YORK.

PAPER KEG.

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To all whom it may concern:

Be it known that I, BERT C. VAUGHN, a citizen of the United States, and a resident of the city of Brooklyn, in the county of Kings, State of New York, have invented certain new and useful Improvements in Paper Kegs, of which the following is a specification.

This invention relates broadly to paper receptacles and more especially to a paper keg.

The principal object of this invention is to provide a reinforced keg formed substantially entirely of paper.

A further object of this invention is to provide a keg formed substantially entirely of paper stock and comprising a body portion of a paper tube reinforced upon its exterior with hoops made from sections of a paper tube; both the body portion and the hoops being cemented together with silicate of soda.

Other and further objects of the present invention will in part be obvious and will in part be pointed out hereinafter by reference to the accompanying drawings wherein like characters are used to represent like parts throughout the several figures thereof.

Figure 1 is a perspective view formed in accordance with my invention. Fig. 2 is a longitudinal sectional elevation showing a sectional view of my invention. Fig. 3 is a detail view showing a transverse section illustrating the action of the supporting hoops.

Prior to my invention kegs have been formed of various materials including thin layers of wood usually referred to as veneer. These layers of wood ordinarily are superimposed and secured together usually by nails. Also in this construction wooden hoops have been used as supporting members. Paper kegs have also been formed with smooth exterior walls or with hoops that were formed directly upon the exterior wall.

The present invention resides more especially in the formation of a very cheap, at the same time efficient paper keg of relatively great strength. The difficulty encountered with large size paper containers such as kegs is the liability of such container to crush due to exterior forces that may be thrown against the side wall of the container at its weakest portion intermediate the heads. After a series of practical experiments I have found that this difficulty may be cured by stapling suitable built up paper hoops upon the exterior of the body in such manner that any force directed against the body wall of the container will be delivered to the hoops in such manner that the said hoops act as supporting arches or trusses. By anchoring the hoops at intervals I am enabled to secure a flexibility which permits the forces to be more widely distributed than where hoops are formed integral with, or are cemented to the side wall of the container, and consequently actual practical use of the container herein disclosed demonstrates its ability to withstand rough usage better than the previously specified types of devices.

Referring now to the drawings, the body portion of the keg is formed from a section of a continuous paper tube which is built up of superimposed layers of paper board that are cemented together with sodium silicate. While various types and sizes of tubes may be used, the tube which is used in practice in this keg is substantially ten and one-half inches in diameter with the side wall 1 of substantially one-fourth of an inch in thickness. In the present invention preferably a pair of inside hoops 2 are formed from a short section of the same tube as the body portion with a small part of the tube cut away and the section compressed upon itself to secure the necessary smaller diameter to use this hoop inside of the main body portion 1. The heads 4 of the present container are made of flat paper boards which likewise are formed of superimposing layers of paper in a substantially flat relation and cementing the various layers of paper board together with sodium silicate. To secure these heads in position outer end hoops 5 are provided, which are substantially the same as the inside end hoops 2. Exterior end hoops 6, usually referred to as chime hoops, are provided adjacent the ends of the body portion 1 and are constructed so that the end of the body portion 1, the outer hoops 5, and the chime hoops 6 all terminate adjacent each other in such manner as to provide a strong thick chime to withstand destructive forces that come against this portion of a container when it is in transit or being shipped.

Intermediate hoops 7 are provided on the exterior of the body portion of the keg intermediate the ends thereof and it is with

reference to these hoops particularly that the present invention relates. The various hoops disclosed in the present invention are secured in position by means of metal staples 8 that are formed from thin strips of metal which are sufficiently strong and malleable to sustain considerable force, at the same time bend with sufficient ease to enable these members to be clenched in position.

Referring now more particularly to Fig. 3, it will be noted that the forces A coming against the body portion intermediate one of said hoops will cause the hoop to expand very slightly from the body portion and bulge outwardly very slightly. This slight bulging is indicated in an exaggerated effect by the dotted lines as at B—B intermediate the staples X and Y—Y. This force A is further distributed beyond the staples Y—Y and causes a further bulging as indicated by dotted lines C—C. This however is further removed from the force A and consequently is of a less degree than is the bulge at B—B. It will be noted that all of the staples shown in Fig. 3 are under tension, with the exception of the staples Z—Z, therefore it will be noted that any force against the exterior of the keg which tends to crush the keg wall has a tendency to set up counter forces in the hoops 7, which counter forces pull outwardly on the said side wall and thereby greatly assist in resisting crushing forces brought against the side wall of the tube.

From the foregoing description it will be noted that the present container is formed substantially entirely from paper with a minimum amount of metal. The only metal being used to hold the parts together are the staples 8 referred to.

Having thus described my invention what I desire to claim is:—

1. A paper keg having a body portion comprising a paper tube formed of a plurality of layers of spirally wound superimposed webs of paper cemented together with silicate of soda, paper heads within said body portion, said paper heads comprising paper boards built up of superimposed sheets of paper cemented together under pressure by silicate of soda, inside head paper hoops also within said body portion and abutting said heads on each side thereof to hold said heads in position, chime hoops comprising superimposed layers of paper cemented together with silicate of soda, said chime hoops having their outer edges substantially coincident with the outer ends of said body portion and being of a width sufficient to lap said inside hoops to provide a reinforcing portion at the ends of said keg, staples penetrating through said hoops and said body portion to secure these members together, supporting hoops intermediate the ends of said keg to support the side walls thereof, said intermediate supporting hoops comprising sections of a paper tube formed of superimposed paper webs cemented together with silicate of soda, and staples spaced at intervals around said intermediate hoops to anchor said hoops and said body portion at predetermined intervals in such manner that forces tending to crush said body portion adjacent said intermediate hoops are transmitted through said staples as tension members and to said intermediate hoops as a compression member to sustain said body portion under such forces.

2. As an article of manufacture, a paper keg having a body portion comprising a section of a cylinder whose wall is composed of superimposed layers of paper cemented together by silicate of soda, heads secured within the ends of said body portion, and a supporting hoop intermediate the ends of said body portion and constructed to sustain the part of said body portion intermediate the heads, staples penetrating said supporting hoop and said body portion, said staples being spaced apart at predetermined intervals to separate and localize the attachment of said hoop to said body portion in such manner that forces tending to crush said body portion are transmitted through said staples to said hoop to render said hoop a compression member tending to resist such forces.

3. As an article of manufacture, a paper keg comprising a body portion formed of superimposed layers of paper cemented together with silicate of soda, a supporting hoop upon the exterior of said body portion, said supporting hoop comprising superimposed layers of paper cemented together by silicate of soda, and spaced apart anchoring means for anchoring said hoop to said body portion at a plurality of spaced apart circumferential intervals to transmit crushing forces upon said body portion to said hoop to enable said hoop to act as a compression member to absorb the said forces.

BERT C. VAUGHN.