No. 818,321 PATENTED APR. 17, 1906.

R. A. WHALL.

PNEUMATIC MATTRESS, CUSHION, &c.

APPLICATION FILED JULY 22, 1905.

Fig. 1.

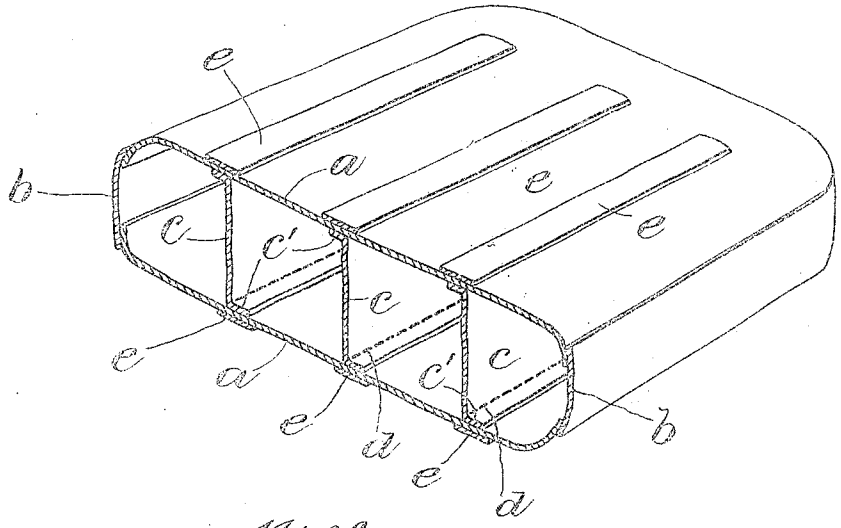
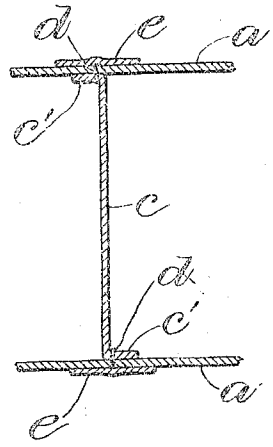


Fig. 2.



Witnesses:
P. W. Pezzetti
E. Batchelder

Inventor:
R. A. Whall.
by Wright, Brown, Quinby & Kay
Attorneys.

UNITED STATES PATENT OFFICE.

RICHARD A. WHALL, OF READING, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO METROPOLITAN AIR GOODS COMPANY, OF READING, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

PNEUMATIC MATTRESS, CUSHION, &c.

No. 818,321. Specification of Letters Patent. Patented April 17, 1906.

Application filed July 22, 1905. Serial No. 270,832.

To all whom it may concern:

Be it known that I, RICHARD A. WHALL, a resident of Reading, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Pneumatic Mattresses, Cushions, &c., of which the following is a specification.

This invention has for its object to provide an air-holding bag adapted for use as a pneumatic mattress or cushion in which the side pieces forming the top and bottom shall be firmly connected against undue displacement by internal air-pressure without liability of breakage of any of the parts and without forming hard bunches or protuberances on the upper surface.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a perspective sectional view of a mattress embodying my invention. Fig. 2 represents a fragmentary sectional view of the same.

The same letters of reference indicate the same parts in both of the figures.

In the drawings, *a a* represent the top and bottom pieces of an air-holding bag, the same being suitably connected at their edges by means such as a marginal strip *b* or in any other suitable manner.

c c represent stay-strips of suitably flexible and practically inexpensive material, stout woven textile fabric in the form of webbing being preferred. The edge portions of the strips are bent to form flanges *c' c'*, which are placed in contact with the inner surface of the pieces *a a* and are united to the latter by rows of stitches *d*, extending through the flanges *c'* and through the pieces *a*. The stay-strips *c* are elongated and extend nearly the entire length or width of the bag, provision being made for the passage of air from side to side of each stay-strip to insure uniformity of pressure throughout the entire air-space. To this end the stay-strips may be made shorter than the length of the air-space, so that air-passages will be formed at their ends.

The top and bottom pieces *a a* are suitably frictioned—that is, treated with unvulcanized rubber—before the parts of the mattress are assembled, and the connecting-strip *b* is preferably similarly treated. The stay-strips do not require frictioning material, and they are stitched to the pieces *a a*, while the frictional material on the said pieces is unvulcanized.

e e represent flexible reinforcing-strips of frictioned material, preferably textile fabric, which are placed upon the outer surfaces of the top and bottom pieces *a a* in position to cover the rows of stitches *d*, the width of the said reinforcing-strips being such that they extend a considerable distance in each direction from the rows of stitches. The frictioned inner surface of the strips *e* is placed in contact with the frictioned outer surface of the top and bottom pieces *a a*. The parts being assembled as above indicated, the structure is subjected to heat in a vulcanizing-oven to vulcanize the frictioning material on the respective parts, and thus firmly unite the same along their contacting surfaces. It will be seen that the vulcanization of the reinforcing-strips *e* to the top and bottom pieces *a a* closes the minute orifices around the stitches, thus preventing the escape of air where the stitches are formed, the said reinforcing-strips at the same time preventing any liability of tearing or rupturing the top and bottom pieces along the lines where they are perforated by the stitches, so that there is no liability of damage to the top and bottom pieces by internal air-pressure.

It will be seen that the structure above described is composed entirely of flexible and yielding parts of sheet material, there being nothing to cause uncomfortably hard places or protuberances.

I claim—

An air-holding bag adapted for use as a pneumatic mattress or cushion, and having stay-strips which extend between the side pieces of the bag and are united to said side pieces by rows of stitches passing through the side pieces, and air-proof reinforcing-strips applied to the outer surfaces of the side pieces and covering the stitches, said strips being united to the side pieces by vulcanization and not only preventing the escape of air around the stitches, but also the rupturing of the side pieces along the rows of stitches.

In testimony whereof I have affixed my signature in presence of two witnesses.

RICHARD A. WHALL.

Witnesses:
C. F. BROWN,
E. BATCHELDER.